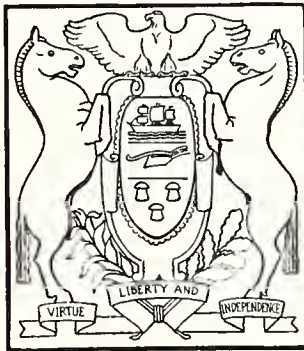




A Circus Project Follows a

ORGANIZATION AND ADMINISTRATION
OF
SPECIAL EDUCATION CLASSES
FOR
THE ORTHOGENIC BACKWARD



BULLETIN 85

Commonwealth of Pennsylvania
DEPARTMENT OF PUBLIC INSTRUCTION

Harrisburg

1935



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EDUCATING THE ORTHOGENIC BACKWARD

“FITTING EDUCATION TO THE CHILD” orients Pennsylvania’s program of Special Education. It aims to promote an appreciation of the fundamental principle that the public schools are organized and maintained for the benefit of the child, and to eradicate as rapidly as possible that uniformity of educational procedure that ignores, in a large measure, mental, physical, and personality differences in children.

Even where the regular grades of our schools are liberally supported and well organized, an excellent program of studies adopted, up-to-date textbooks and other equipment provided, teachers well qualified by professional training and experience, and supervision thorough and constructive, there will remain some pupils who, on account of some physical, mental, or personality handicap, cannot find in these schools a fair educational opportunity. Even in those districts where children in the regular grades are being classified according to ability for school work into three or more groups, and where there is some differentiation of the program of studies, including activities and units of study, there still remains a considerable number of these handicapped children to whom any suitable educational opportunity is denied. Their continued repetition of grade work due to their retardation, is not only expensive, but wasteful and gives rise to dislike to school, truancy, and other problems.

Handy

The mentally handicapped child has definite mental limitations that interfere with the acquisition in the usual way of the subject matter as taught in the grades. To continue such a program is wasteful not only of time, money, and effort, but leads to undesirable habits and attitudes. On the other hand, experience with diversified teaching materials and methods of instruction has proved that there are other activities of greater educational value for such children which they can perform successfully at higher proficiency levels. These activities are largely manual. When literary instruction is motivated through and correlated with such activities, it takes on a practical application which stimulates greater effort on the part of the learner, is more readily acquired, more useful, and more enduring.

LESTER K. ADE

Superintendent of Public Instruction

June 15, 1935.

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ACKNOWLEDGMENTS

CLASSES for the mentally retarded have been in operation in Pennsylvania for forty years. They were among the first in the country. Many of those who labored faithfully and sympathetically to bring educational opportunity to pupils, who through no faults of their own were trailing their fellows and stigmatized as laggards, are still actively engaged in this work. They witnessed significant changes in the conceptions of mental defect. They witnessed the genesis of a practical psychology applicable to specific educational problems, the formulation of classifications differentiating mental competency, and the construction and refinement of tests for classification purposes. The cumulative experience in the intelligent use of the knowledge and means accruing from this development on the part of those endeavoring to provide a suitable and effective educational program for the mentally retarded pervades the contents of this bulletin. Their efforts are worthy of our acclaim.

In the last decade the Department of Public Instruction has attempted to organize and correlate teaching procedures which would eventuate in a practical, purposive, integrated educational program for the mentally retarded. During this time the following fourteen school districts collaborated with the Division of Special Education in conducting regional conferences to demonstrate, after careful preparation, the coordination and integration of all classroom activities centered in a practical unit of study: Abington, Chambersburg, Erie, Harrisburg, Lancaster, Latrobe, Lebanon, Lewistown, Monaca, Palmerton, Plymouth, Reading, Scranton, and West Chester. Out of these conferences have come a critical evaluation of techniques and devices.

Classroom practices suggested in this bulletin are in a large measure the contribution of these conferences and the effective work which has been done by teachers of the orthogenic backward throughout the Commonwealth. To the school authorities and teachers who have cooperated in this development sincere appreciation is acknowledged.

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PART 1

STANDARDS FOR SPECIAL CLASSES FOR THE ORTHOGENIC BACKWARD

RECOGNITION of the doctrine of individual differences in mental ability, and the inadequacy of the traditional course of study to meet and supply the needs of retardates in the public schools, actuated far-sighted pioneers to organize special classes for these pupils in widely separated school districts—in Philadelphia in 1895, in New York in 1895, and in Providence in 1896.

Organization of these classes was an educational venture. Naturally, the teachers in charge were inadequately prepared and the educational procedure differed very little from that of the regular grades, except that subject matter was administered in small units to smaller groups with greater emphasis upon repetition and drill. The results of this procedure were not gratifying.

Successful application of the psychological principles of Sequin's Physiological Method, in training mental defectives in institutions, came as the first marked departure in the development of a suitable and satisfactory educational procedure for the mentally handicapped. Subject matter became more concrete and handwork was introduced. The special class teachers of Boston in 1917 published a handbook of activities that could be pursued successfully in training the mentally defective. This treatise was used extensively by teachers of the orthogenic backward and undoubtedly had a stimulating effect and improved teaching method.

Probably this change in educational procedure and the absence of clearly defined objectives isolated the special class. It became a catch-all for the various kinds of educational misfits, thus promoting the interests of the pupils in the grades and ignoring the educational needs of those for whom these classes originally had been established. Recognition of the validity of the educational claim of all types of educable handicapped children on a par with the non-handicapped demanded the definition of educational objectives and the formulation of standards for their consummation.

Section 1413 of the School Code specifies that "adequate educational facilities shall be provided for every child between the ages of eight and sixteen, who is gravely retarded in his or her school work, or for any child between the ages of six and sixteen, who, because of apparent exceptional physical or mental condition, is not being properly educated and trained."

Standards for the organization and administration of special classes were approved by the State Council of Education at a regular meet-

ing October 1, 1926, for the different types of special classes and special schools as to:

- Location of class.
- Constitution of class.
- Size of class.
- Conditions of admission and discharge of pupils.
- Equipment.
- Course of study.
- Methods of instruction.
- Qualifications of teachers.

STANDARD 1. LOCATION OF CLASS.

“Buildings or classrooms in buildings used for orthogenic backward classes shall comply with the requirements of Article VI of the School Code.”

In selecting a classroom for the orthogenic backward, consideration should be given to the following items:

1. Sufficient light area—equal to 20 percent of the floor space.
2. Sufficient air space—30 cubic feet per pupil.
3. Adequate heat and ventilation.
4. Sufficient floor space for classroom desks of the movable type, or for small individual tables and chairs, for the maximum enrollment, and for such other equipment as is necessary to carry on legitimate activities for the orthogenic backward. When two or more special classes are centralized with a division of instruction, the several rooms need not be as large as when one classroom accommodates all activities.
5. A location which offers the least disturbance to the regular grades incident to the noise of the manual and physical activities of the special class.
6. Ample blackboard and bulletin board space.
7. Sufficient storage and display space for handicraft materials, finished and unfinished articles, and general classroom supplies.
8. Running water (preferably hot and cold) with a deep sink conveniently located.
9. Electrical outlets for electric iron, electric hot plate, electric fret saw, and other electrical appliances.
10. A room having possibilities for attractive decoration.

Sanitary and conveniently located basement rooms, with adequate window area, floor space, heat and ventilation, and with a sunny exposure, may be used, if other suitable rooms are not available, and if such rooms are approved by the School Buildings Bureau of the Department of Public Instruction.

Care should be exercised not to so isolate the orthogenic backward that they acquire the feeling of being an excluded or ostracized part of the school organization. This suggestion does not apply to centers

occupying an entire building, but even in such instances opportunities should be sought to lessen any feeling of being different from the children of the regular grades.

The school environment of orthogenic backward children as well as of other children in the public schools should be the best the school district can afford. All surroundings should be conducive to good health and contentment. For the development of physical tone, which is apt to be below par, it is essential that there should be, in addition to the above specifications, sufficient play area, both indoors and out. The pupils enrolled in an orthogenic backward class usually occupy the same room year after year; hence the selection of a suitable classroom for them is of paramount importance.

STANDARD 2. CONSTITUTION OF CLASS.

“Orthogenic classes shall include restoration classes, disciplinary classes and classes for the mentally backward and mentally subnormal. Wherever possible, separate classes shall be organized for the different types. Classes for the mentally subnormal shall contain only the mentally defective who are trainable in groups of the size constituting these classes.”

This bulletin confines itself exclusively to the organization and administration of special classes for the mentally backward (mentally inferior) and the mentally subnormal (mentally defective) for reasons stated later.

These two types of the orthogenic backward are defined as follows:

THE MENTALLY BACKWARD.—The “mentally backward” or so-called dull normal, are socially competent at a low intellectual level, as measured by grade standards. They are classified as mentally inferior, or as dull normals, because of their innate inability to progress satisfactorily in the traditional course of study of the regular grades, even when it is reduced to minimum essentials and distributed over a longer than usual period of time.

When the school population is classified into homogeneous groups, the mentally inferior are frequently placed in slow sections of the regular grades with a modification of the regular course of study. Such classification and modification do not offer these pupils a satisfactory educational opportunity. The subject matter of the regular curriculum and the method of presentation do not engage their interest and results are usually inferior and unsatisfactory. They profit more from instruction that is largely manual in character.

Probably 10 percent of the school population falls within this classification.

THE MENTALLY SUBNORMAL.—The term “mentally subnormal” is applied to the socially incompetent—those persons who will always require supervision in society or in custodial institutions. The mentally subnormal or the mentally defective, as defined by a social criterion, are not capable of maintaining normal social contacts, of participating in the establishment and maintenance of an adequate and socially acceptable home, in legitimate community activities, and of using their leisure time profitably and wisely. Only the high grade

mentally subnormal (high, middle, and low grade morons, Goddard Classification) are eligible for enrollment in approved special classes.

It is estimated that at least 1 percent and not more than 2 percent of the school population falls within this classification.

Wherever feasible, separate classes should be established for the mentally backward and the mentally subnormal. These two types may be combined, however, when there is an insufficient number of each to organize a class, since the educational procedure for the two types is fundamentally similar.

The presence of pupils who are mentally normal, but pedagogically retarded through illness, frequent transfers, or other causes resulting in educational maladjustment, in a class for the orthogenic backward, presents a teaching situation that cannot be administered with fairness. Either one group or the other will be neglected. The pedagogically retarded pupil requires intensive instruction in grade subjects looking toward restoration to his complementary grade at the earliest possible moment, while the orthogenic backward pupil requires an educational program featuring manual activities. The problem of pedagogical retardation may be solved either through the organization of restoration classes or the employment of coaching teachers.

Disciplinary or behavior problems of normal mentality or better are obviously out of place in a class for the orthogenic backward. To threaten a troublesome child with assignment to an orthogenic class, regardless of his mental status, indicates a complete misconception of the aims and objectives of classes for the orthogenic backward. It is true that many of the orthogenic backward present disciplinary problems in addition to educational maladjustment. Usually if the educational problem is solved, the behavior problem disappears.

All too frequently, troublesome children are assigned to classes for the orthogenic backward without regard to their innate mental abilities, and the mentally defective and mentally backward who are conformed in behavior are promoted "on age" from grade to grade until released by the expiration of the period of compulsory attendance. The over-age mentally defective and mentally backward who do fairly acceptable work in the grades after much repetition and drill are seldom assigned to a class for the orthogenic backward and, when they are, the purpose frequently is to restore them to the regular grades as soon as possible regardless of their chronological fitness and without regard for their best educational interests. An appreciation of their actual life-needs, insofar as this is possible, should convince educational administrators that a program of study adapted to these needs will be far more beneficial than an increasingly difficult literary program fraught with discouragement through lack of ability to comprehend and apply the information imparted.

STANDARD 3. SIZE OF CLASS.

The maximum enrollment of classes for the mentally subnormal or of mixed classes for the mentally subnormal and the mentally backward has been fixed by the State Council of Education at eighteen;

for the mentally backward exclusively at twenty-five, provided the group is physiologically and chronologically homogeneous.

The lack of neuro-muscular coordination of children under nine or ten, its development during the pre-pubescent period, the peculiar awkwardness at the onset of adolescence, the variations in interests at these three levels, as well as differences in mental abilities within these particular groups, set up a very difficult teaching situation, and indicate the need for groupings that are as homogeneous as possible. Due to these characteristics peculiar to children at different age levels, a too wide distribution of ages in one class is not desirable. To effect homogeneous grouping and provide sufficient and suitable facilities for mentally handicapped children, two, three, and five class units or centers are advocated.

STANDARD 4. CONDITIONS OF ADMISSION AND DISCHARGE OF PUPILS.

Section 1413, paragraph one, of the School Code provides that "it shall be the duty of the secretary of the school board, teachers, school enumerators and attendance officers to report to the medical inspector and to the district or county superintendent of schools, on or before the 15th day of October each year, every child between the ages of eight and sixteen years who is gravely retarded in his or her school work, or any child between the ages of six and sixteen who, because of apparent exceptional physical or mental condition, is not being properly educated and trained, and as soon thereafter as possible, the medical inspector shall examine such child in accordance with rules of procedure prescribed by the Secretary of Health, and report whether such a child is a fit subject for special education and training. In school districts of the first, second, and third class, having a district superintendent of schools, said report shall be made to the superintendent of the district. In all other districts, the report shall be made to the Secretary of Health and by him reported to the superintendent of schools of the county.

"Pupils may also be designated as candidates for special education by mental clinics approved by the State Council of Education, or by a psychologist or a psychological examiner who has been certified by the Superintendent of Public Instruction and is employed by any school district."

The proper selection and classification of pupils, based on a thorough psychological examination, are essential to the success of a class for the orthogenic backward. The policy of waiting until a child is "gravely retarded" (two or more years) with the sense of failure strongly ingrained before assigning him to a special class should be avoided. The process of selection should begin when pupils enter the kindergarten or first grade. Through this procedure, repetition of grades, with the concomitant acquisition of undesirable habits and attitudes, such as discouragement, embarrassment, resentment, inattention, idleness, truancy and delinquency, will be minimized. Early selection and assignment of pupils to an orthogenic backward class will afford, also, the maximum amount of time for the development of

¹ Certification requirements adopted by the State Council of Education, effective January 1, 1934 (see Appendix).

desirable habits and manu-mental training. The limited school careers of these pupils demand the best possible use of their school time. Very little benefit will accrue to the child who is assigned to the orthogenic backward class after he is fourteen or fifteen years of age and after he has acquired a definite dislike for school. Such an assignment places upon the special class teacher the difficult task of transforming undesirable mental attitudes and robs a younger orthogenic backward pupil of a real educational opportunity.

If a child fails to respond normally on entering school, or at any time shows signs of impaired ability with its consequent retardation, he should be referred promptly for a psychological examination by a qualified examiner.

Pupils may be discharged from a class for the orthogenic backward before the end of the compulsory attendance period under the following conditions:

1. When the medical inspector reports (Health Department Form 98) that the child shows "marked" or "extreme" subnormality and, therefore, requires institutional training or care. (It may be difficult in certain instances to definitely determine whether a mentally defective child should be excluded, because of marked mental subnormality, or whether it is a subject for education and training in an orthogenic backward class. These doubtful cases should be given a trial, of sufficient length, in an orthogenic backward class to determine their actual status.)

2. When an approved mental clinic or a certified psychologist reports a child as being so mentally defective that he cannot profit from the instruction given in a special class for mentally defective pupils.

3. When a child, having normal hearing, is a mentally defective mute. (Hearing mutes of over five years of age shall be presumed to be mentally defective unless evidence to the contrary is approved by the Department of Public Instruction.)

Such exclusion should be by certification of the medical inspector of the school district on Form 98 of the Pennsylvania State Health Department.

When this action is approved by the Board of School Directors, the Superintendent of Schools should notify the parents or guardian that such action has been taken and exclude the child from the special class. Notice of such exclusion also should be forwarded to the State Department of Welfare, Harrisburg.

If a school board deems it expedient to make provision for low-grade feeble-minded children of compulsory school age, it should be borne in mind that such children do not require the services of a specially trained teacher nor the type of equipment specified for orthogenic backward classes. They should be placed in charge of a motherly matron and supplied with ample play material. Such a group should not be designated as an orthogenic backward class or be considered a part of the public school system.

As the mentally subnormal occasionally attain third or fourth grade proficiency in literary subjects as the result of individual, diag-

nostic teaching in an orthogenic backward class, there is a tendency to return them to regular grades with little regard for their chronological and physical fitness. If they are over-age for the grade to which they are returned, they soon find themselves socially maladjusted and, in a larger group with less individual attention, they quickly become educational misfits.

If in a teacher's opinion, a pupil shows evidence of being able to cope satisfactorily with the work of a regular grade normal for his age and if a psychological examination confirms the teacher's opinion, such pupil should be given an opportunity in that grade. No pupil should be transferred from an orthogenic backward class to a regular grade upon the recommendation of the teacher only.

School districts, having a junior high school, should make provision in that organization for mentally backward pupils of chronological junior high school age. Where there is a sufficient number of this type, a class or classes should be organized for them with a special program, emphasizing industrial and household arts and appropriate correlated subject matter. If they must continue in elementary orthogenic backward classes, they should be given ample opportunity for industrial and household arts training in the junior high school.

Mentally backward pupils who have attained the age of sixteen should be encouraged to seek remunerative employment or engage in some useful occupation in the home or community, unless suitable educational opportunities can be provided for them in connection with the secondary school program.

SOCIAL ADJUSTMENT—The maintenance of successful and useful human relationships is the ultimate aim of all education, whether it ends with the expiration of the compulsory period or the successful culmination of a college career. Orthogenic backward pupils usually have forced upon them the educational handicap of a limited school career. Adequate education for them, as a rule, begins late and ends at the age of 16 when they are thrown upon their own resources with little preparation for successful participation in the activities of a work-a-day-world.

If acquired habits, attitudes, skills, and knowledges are to function in consummating satisfactory social relationships and partial or complete economic independence, assistance must be given orthogenic backward pupils in bridging the gap between school life and these adjustments. Since the school is the only agency having an understanding of the pupils' limitations and abilities, it is the duty of the school to pass on this information to employers and others in order that the employe may have a better opportunity to succeed.

STANDARD 5. EQUIPMENT.

“Orthogenic backward classes shall be equipped with materials and devices for appropriate forms of handwork, such as carpet and rug weaving, woodworking, sewing, cooking, and other manual activities of educational value.”

These specific activities are suggestive, not mandatory. Additional activities of educational value are always in order. No activity should

be started that cannot be financially justified or continued if it can be supplanted by a less expensive or more appropriate activity of equal educational value.

A statement of minimum equipment for a single orthogenic backward class; a supplementary statement of general classroom supplies; of suggestive additional classroom equipment and supplies, not essential but desirable; and of suggestive additional tools and materials for handicrafts will be found in the appendix to this bulletin. The supplementary list is offered as suggestive to teachers who wish to develop equipment beyond the prescribed minimum.

STANDARD 6. COURSE OF STUDY.

“Courses of study * * * * * in the types of special classes above enumerated (orthogenic backward) shall be subject to the inspection and supervision of the Department of Public Instruction and approved by it.”

Due to the diversity of interests, of abilities, and of the physiological development of pupils usually found in single unit classes for the orthogenic backward, the course or program of study can be outlined in a general way only and must necessarily lack detail. It is limited by what the pupils can learn, how they learn, and what for them is worthwhile learning. It aims to familiarize the pupils with their environment and to enable them to adjust themselves on the basis of innate abilities to environmental conditions. Therefore, any activity or situation that stimulates pupils in the attainment of these objectives has educational value and may be made a part of the program of studies. In the administration of such a program there must be freedom from the formal curriculum of the regular grades, as well as freedom from definite and specific allotments of subject material to be covered in a given length of time.

COURSE OF STUDY SHOULD BE ADAPTED TO ACHIEVEMENTS, ABILITIES AND NEEDS—On assuming charge of a special class, the teacher should determine the achievement of the pupils assigned to her in the subject matter of the regular grades, their physical handicaps, if any, and their abilities to handle tools and materials. Former school records and specimens of school work, if available, as well as the summary sheet of the psychological examination, will supply part of this information. In addition, exploration in the classroom will be necessary. In this exploration, it is preferable that the teacher should err in assigning tasks that are too easy, rather than too difficult, so as to avoid a repetition of the discouragement through failure, which the children probably have experienced previously. A visit to the home of each pupil early in the school year and shortly after the assignment of new pupils during the year will augment the teacher's knowledge of her pupils and enable her to plan the program of study more intelligently.

Having determined the pupils' present literary, physical and manual achievement, the next step is to consider their present and future needs and to organize the program of study accordingly.

ABILITIES OF THE ORTHOGENIC BACKWARD—The fact is well established that the mentally subnormal and the mentally backward are definitely handicapped in mental ability to acquire, to assimilate, and to use, to any profitable degree, the content of the traditional course of study as taught in the regular grades. The mentally subnormal seldom exceed third grade proficiency and the mentally backward rarely attain sixth grade proficiency and then only at a chronological age much above the normal.

In view of these limitations, together with the futility of teaching subject matter that is of little or no use and in consideration of the facts that the orthogenic backward approximate the ability of normal pupils in manual dexterity and physical energy and enjoy tasks within the scope of their abilities, the program of study for them should be approached from a manual activity point of view. To further maximum economic and social independence, the development of useful forms of manual and industrial skills should be emphasized as well as the development of adequate habits of "moral and social" response. Such training is not vocational but rather pre-vocational in that it gives definite training in habits, attitudes, and characteristics that lead to more desirable workmanship and social proficiency.

NEEDS OF THE ORTHOGENIC BACKWARD—The educational needs of the orthogenic backward are not supplied through "minimum essentials" taught more intensively and at a slower rate. Even though, with much repetition and drill, they can be taught long division, problems in addition, subtraction, multiplication, and division of fractions, and other mechanical arithmetical operations of even greater difficulty, the accomplishment will be a trick performance with little understanding or need for practical application. On the other hand, the fundamentals of the tool subjects must be taught in orthogenic backward classes to a limited degree for practical purposes. The approach however, is entirely different from that of the regular grades.

The most important intellectual need of the orthogenic backward is training in ability to give intelligent and accurate oral expression to experiences and desires. They should be able, before they leave school, to write simple and legible letters and simple statements; to tell time, to read and interpret street signs, bill boards, grocery hand bills, newspaper headlines and advertisements, labels and directions on packages of foods, cosmetics, medicines and other like commodities, telephone directories, transportation schedules, calendars, and notices in common community use. In some few instances the pupils may enjoy reading for pleasure but this is the exception rather than the rule. They should be able to apply the four fundamental processes of arithmetic in the purchase of commodities, in the calculation of time and wages, and in other situations involving a practical use of numbers; they should know the geography of their local community and vicinity and, to a useful degree, that of their State and Nation; they should be familiar with community, state and national civics and the outstanding events and characters of American history. Units of study or projects usually are suggestive of social studies content as a part of the integration. Accounts of current events in local and

metropolitan daily and weekly newspapers and magazine articles may be used advantageously in familiarizing the pupils, in a concrete and practical manner, with the administration of local, state and national government, as well as with other facts of civic, geographic and historic interest. To create in the orthogenic backward child a desire for and an interest in these facts is the job of the special class teacher.

COURSE OF STUDY SHOULD APPEAL TO THE INTERESTS OF THE ORTHOGENIC BACKWARD—"Interest is a powerful entering wedge to the child's mind." Little progress will be made in elementary subjects or in manual activities if assigned tasks do not appeal to the child's interest and stimulate his imagination. Having secured his interest, he should be given an opportunity to use his imagination, to recall facts previously learned, and to apply them to the solution of a new problem. The mentally retarded require more detailed instruction, more actual demonstration of how to do, and more supervision, but with interest stimulated and maintained, more independent work is possible. Therefore, this trait should be cultivated.

The influence of interest will be found particularly potent when applied to instruction in the 3 R's. Reading lessons, dealing with events and material outside the pupils' realm of experience and failing to enlist their interest, result in little more than word calling. If, on the other hand, the teacher utilizes the activities of the children as basic reading material, their interest will be stimulated immediately and greater progress will be achieved. The pupils will have a better understanding of the purpose and value of learning to read and their interpretation of printed symbols will be greatly facilitated when their own experiences in their own words are used in the written composition or story. Incidentally, such procedure has additional value in that the pupils must recall and organize a previous experience to give it oral expression. Children are natural egoists and are primarily interested in their own affairs. Appeal to this interest is a powerful motive in developing ability, both literary and manual. The teacher should observe the pupils for the development of new interests and utilize them appropriately.

CONTINUOUS OPPORTUNITY FOR GROWTH—Orthogenic backward class instruction must provide for continuous physical, mental, and moral growth. This requires a sequence of progressive steps in the three phases of the orthogenic backward class program: The fundamental tool subjects, health and recreational activities, and manual activities. There should be a progressive educational program for each pupil, providing opportunity for constant advance in each branch of study. There should be no dawdling. When lessons or tasks are performed with acceptable skill, the pupil is ready for the next higher problem or process. It is not acceptable orthogenic backward class practice to use pupils during school hours for painting quantities of grade school furniture, for regularly operating a ditto machine for the use of the grades, and other work of a purely routine nature, which has ceased to have educational value for the pupils. Orthogenic backward class teachers should also guard against turning their classrooms into "shops" for the manufacture of articles having a ready

sale. This practice obscures the primary objective of special education and opens the way to severe criticism. Special classes are organized and maintained for the "education" of the orthogenic backward. This objective should not be minimized by the desire to make the class wholly or partially self-supporting. There is no educational justification in having pupils weave the same kind of baskets and rugs, to cane chairs, and so forth, when they have attained proficiency in these operations. Wherever practical, pupils should be encouraged to utilize their acquired skills for gain during leisure hours.

INTEGRATION OR UNIFICATION—Children who are mentally handicapped comprehend the purpose of literary skills, acquire them more readily, and retain them longer when their use is definitely associated with personal experiences and familiar materials. This statement is basic to the principle that, in teaching the orthogenic backward, the application of these skills should be motivated and vitalized through direct correlation with concrete manual activities, developed preferably in connection with a project or unit of study. The value of literary instruction will become more impressive if it is directly applied to the activities involved in a unit of study; and the tools and materials with which the children work will increase in interest as they study their source, nature, history, manufacture, and use.

STANDARD 7. METHODS OF INSTRUCTION.

"* * * * * methods of instruction in the types of special classes enumerated (orthogenic backward) shall be subject to the inspection and supervision of the Department of Public Instruction and approved by it."

Successful teaching of the orthogenic backward presupposes the teacher's familiarity with the psychology of atypical children and her ability to apply the psychological principles involved. Application of the following principles and methods of instruction will establish optimum educational situations and will tend to promote in the pupils that "illusory quality known as personal satisfaction and happiness"—the direct outgrowth of successful achievement.

1. Start instruction at the child's achievement level and not where he should be for his age. This will avoid failure and discouragement.

2. Select content that appeals to and holds the interest of the pupils and that has practical value for them.

There should be a natural relationship between the intellectual development of the pupils and the subject matter of instruction.

3. Use concrete situations and materials extensively and employ the method of direct association between concrete material and abstract symbols.

This refers to such devices as sense training material, educational toys, kindergarten blocks, beads, discs, splints, correlated seat work, pictures, charts, posters, lantern slides, models, specimens,

and miniatures, as well as the tools and materials for the various manual activities incorporated in the program of study.

4. Re-enforce instruction with repetitive drill.

Greater drill is necessary for the mentally retarded that they may retain and use information acquired. To be effective, drills must be varied frequently, even though the underlying facts remain unchanged.

5. Give recognition to the educational value of all modal types of mental imagery.

Instruction sometimes becomes effective only when general kin-aesthetic and/or tactile imagery is/are elicited to re-enforce the visual or auditory impressions or both. This is particularly true in teaching beginners to read and to spell. The Montessori sand-paper letters and wooden block letters are effective in the teaching of word recognition and reproduction.

6. Modify instruction in accordance with short memory spans. There is a direct relationship between short memory spans and inability to progress normally in the grade subjects. This is evident frequently in learning to read and to spell. The combining and grouping of simple units, the application of rhythmic intervals, and of devices that appeal to every type of imagery, should be employed to compensate for this handicap.

7. Intersperse formal instruction with periods of relaxation and recreation. Periods of formal instruction should be short. The lack of interest in formal subject matter on the part of the orthogenic backward interferes with sustained attention. Progress can be achieved only in terms of small increments.

8. Camouflage instruction, wherever feasible, with the spirit of play, dramatization or competition. Utilize the manipulative instinct. Mentally retarded children frequently learn in spite of their handicaps when the approach follows natural aptitudes.

9. Encourage and emphasize oral expression on the part of the pupils.

The special class teacher should avoid continually dominating the classroom situation. She should recede into the background as much as possible, stimulating and encouraging oral expression on the part of the pupils.

10. Aim to develop the abilities of each pupil—not to correct irremediable defects or to develop abilities beyond the pupil's capabilities.

11. Criticize constructively and train pupils to evaluate their own work.

12. Praise when merited.

Pupils readily detect insincerity and deceit in simulated praise. They should learn early that only their best efforts are acceptable, that slovenly work will not be tolerated, that a task once begun

must be satisfactorily completed before a new one may be attempted. A process may be so tedious that it should be alternated with other activities, but it should be completed within a reasonable time.

STANDARD 8. QUALIFICATIONS OF TEACHERS.

The State Council of Education adopted the following certification requirements for teachers of the orthogenic backward:

DISTRIBUTION OF COURSES AND TRAINING FOR CERTIFICATION—The distribution of special professional courses and training for the certification of teachers for orthogenic classes, known variously as opportunity, ungraded, development, atypical, restoration, backward, and delinquent classes, is as follows:

	<i>Semester Hours</i>	
	<i>Minimum</i>	<i>Maximum</i>
	<i>Requirements Allowance</i>	
1. EXPERIENCE	0	8
a. Teaching in approved special classes of this type or institution for the feeble-minded.		
b. In social service (experience as visiting teacher, probation officer or social worker, etc.) Classroom teachers who have displayed exceptional competence in social service to their children may offer teaching experience to meet this requirement, such exceptional competence to be certified to by the superintendent of schools or a competent person deputized by him for this purpose.		
c. In public health work (school nurse, public health nurse, etc.)		
d. In psycho-educational or psychiatric clinic as psychological examiner.		
2. CONTENT COURSES: In Education of Subnormal Children, Clinical Psychology, Abnormal Psychology, Psychology of Atypical Children, Psychiatric Social Work, Mental Tests, Speech Correction, Health Education, etc.	6	10
3. MANUAL TRAINING, INDUSTRIAL AND HOUSEHOLD ARTS, ART, CRAFTS, AND RELATED COURSES.	2	6
4. SPECIAL METHODS	2	6
TOTAL	20	

OTHER DESIRABLE EXPERIENCE—It will be noted in the above certification requirements that no teaching experience is necessary, other than the discharge of practice teaching requirements. It is desirable, however, that special class teachers should have had experience in the elementary grades before attempting to teach the mentally retarded. As a rule, primary teachers are better adapted to special class teaching, due to their familiarity with the behavior responses of younger children and with the content and methods of instruction employed in initiating children into the mysteries of the "tool subjects" of the elementary curriculum. On the other hand, the procedure of the special class differs entirely from that of the regular grades. Education in the special class takes on a new meaning and is no longer defined in terms of quantitative grade achievement.

PERSONAL QUALIFICATIONS.—The education of the mentally retarded challenges the intelligence, the initiative, the creative ability, and the physical energy of the best teachers and offers a rich opportunity for continuous professional development. An interested and critical attitude toward their work, observing the present and future needs of their pupils, appraising the abilities of their pupils, and adapting instruction accordingly, is essential for success.

The teacher of the orthogenic backward should have a natural aptitude, as well as special preparation, for practical arts and handicrafts. Musical ability and training, more than ordinary interest in physical education, and experience in playground activities are definite assets.

As to other qualifications, the teacher of the orthogenic backward should be physically strong, emotionally stable, patient, sympathetic, realistic, optimistic, stimulating, and above all should possess a well-developed sense of humor.

Household Arts Training in a Multiple Unit for the Orthogenic Backward



PART II

ORGANIZATION AND MANAGEMENT

IN ADDITION to conformity with the standards adopted by the State Council of Education, certain other conditions are essential to the establishment of optimum educational situations for the orthogenic backward. These relate to the type of special class, classroom organization and management, and to methods of classroom procedure.

SINGLE AND MULTIPLE UNITS

The type of special class organization effected will be governed by the number of pupils requiring special education, the age and residence of the pupils selected, and available housing facilities. In some districts, where more than one special class is required, centralization may be feasible and desirable; in other districts single unit classes, conveniently located, are more practical; while in other situations a combination plan is more suitable, i. e., single classes in outlying sections of the district for the younger children with a centralized school or schools in the more thickly populated sections for the older and more capable pupils.

VALUE OF CENTRALIZATION

Centralization offers many advantages, such as:

1. Opportunity for the classification of pupils according to age, sex, and ability.
2. Economy in the amount and use of equipment.
3. Opportunity for departmentalization on the basis of subject matter: literary skills, health and physical education, industrial arts, manual arts, and household arts.
4. Specialization on the part of teachers in these subjects and an opportunity to select and assign teachers to positions for which they have a natural aptitude as well as specialized training.
5. An opportunity for greater stimulation, competition, and cooperation on the part of both teachers and pupils.
6. An opportunity for the pupil to progress from one group or section to the next higher rather than continuing as customary in the one room until the expiration of the period of compulsory attendance.
7. An opportunity for the pupils to come under the instruction of several teachers rather than to remain with the same teacher year after year as in isolated classes.

ARRANGEMENT OF FURNITURE AND EQUIPMENT

The furniture of a special class should be arranged to the best advantage, taking into consideration floor space, natural and artificial illumination, the amount and kind of equipment to be placed, and the work to be done. Woodworking benches and sewing machines should be placed in a good light; floor looms, after they are threaded, do not require close application of eyesight for operation and may receive secondary consideration so far as illumination is concerned.

The placement of pupils' desks or tables and chairs in a hollow square formation, as shown on the suggested layout for a single unit orthogenic backward class in the appendix of this bulletin, enables the teacher to move easily from one pupil to another. This arrangement also affords an opportunity to separate more widely the several sections of the class.

STORAGE FACILITIES

Unless ample storage facilities are provided, the orthogenic backward class can easily become very unsightly and disorderly in appearance. Part of the training of the orthogenic backward class child should be in the proper care of tools and materials. This training cannot be effective unless there are adequate storage facilities. There is little excuse for not having sufficient storage space, if the classroom has sufficient floor area, as closets, shelves, racks and bins may be made from orange crates and other salvaged lumber, if necessary.

STORAGE OF TOOLS—Proper care of tools is fundamental to good workmanship. There should be a place for tools and all tools should be in place when not in use. Tools may be cared for in several ways, depending largely upon the number. In a special class center, the manual training room should have a large tool closet, whereas in an isolated orthogenic backward class, a small wall closet or cabinet will suffice. Some tools may be kept in the rack of work benches, but drawers and chests usually are not satisfactory tool receptacles in orthogenic backward classes. After proper storage space for tools has been supplied, definite procedure for their care should be initiated and followed.

SUPPLY CLOSETS—Closets with shelves (preferably fitted with wooden boxes with hinged lids) will facilitate the proper storage and handling of raw materials for loom weaving, sewing, brush making, leathercraft, and miscellaneous crafts.

Reed and cane are somewhat difficult to store satisfactorily, specially in a center where large quantities are purchased. There are at least three alternatives—(1) a corner closet in the classroom, or other convenient place, extending from ceiling to floor, with hooks in the top of the closet for suspending bundles of reed of various sizes; (2) a long low chest (similar to a window seat) built in classroom or other convenient place, with lid opening the entire length and with one of the short ends of chest open through which to pull the reed or cane as desired. The inside of this chest is sectioned vertically as well as horizontally to keep the several sizes of reed or cane separated; (3)

shelves or racks, outside of classrooms, on which the reed and cane may be laid horizontally.

LUMBER RACK—A lumber rack or other suitable storage place is necessary when lumber is supplied in quantity. Small pieces of scrap wood should be sorted as to size and stored in closets or in packing boxes preferably outside the classroom.

PAINT CLOSET—Paints should be kept, when not in use, in a metal receptacle other than the cans in which they are purchased. In multiple unit orthogenic backward centers, using a considerable quantity of paint, closets of galvanized iron are satisfactory for this purpose. In some instances, such closets have been made in junior high school shops. A metal lined shelf or a large metal box, or can, will serve the purpose in a single unit orthogenic backward class.

PAINT TABLE—Preferably all painting should be done at a table with a metal top. If a metal top table is not supplied, the painting surface should be protected with layers of newspaper.

WET PAINT SHELF—A shelf with a base of wire netting provides an excellent drying place for freshly painted articles. Its use will prevent marring wood surfaces and will hasten the drying process, as the open mesh of the wire permits the air to circulate freely around the painted surfaces.

INDIVIDUAL BINS—Individual bins or sections for unfinished handwork will facilitate and improve classroom management. These are particularly essential when there are no other means in the classroom for storing unfinished handwork. There should be an individual section or bin for each pupil measuring approximately 15" x 15" x 15".

SHELVES AND DISPLAY CABINETS—Adequate space should be provided for the display of finished handwork, such as shelves built just above the blackboards. Cabinets with glass doors are more satisfactory for displaying handwork and keeping it free from dust. Lacking facilities for such display, the handwork is ordinarily taken home by the pupils as soon as it is finished and visitors have little idea of the type and variety of manual activities included in the educational program of the class.

SEATWORK TABLE OR RACK—The special class teacher will experience a need for a suitable place to keep seatwork, that it may be readily accessible to the pupils. A rather large table may be used for this purpose, but an open book case, a large library magazine rack, or a series of expansion pockets constructed of wrapping paper and mounted on 22" x 28" poster mats, will be more satisfactory. A pocket for each member of the class, identified with his name, provides a convenient receptacle in which to place the daily seatwork in advance.

FILING CASE—The teacher should have a suitable storage place, easily accessible, for filing the individual cumulative records of her pupils, handicraft patterns, bulletins, and other literature. The size will be governed by the number of pupils, i. e., one or two drawers may be adequate for a single class, whereas a metal filing unit of four drawers or more will be required for a multiple unit center of five or more classes.

LIBRARY CORNER

If space is available, a small open shelf book case, preferably made by the pupils, together with a small table and four or more chairs, placed in the "library corner", will aid in the development of an attractive place for the pupils to read quietly and independently. Chairs, tables, and settees may be made from orange crates and painted or covered with cretonne to harmonize with the color scheme of the classroom.

DECORATION OF CLASSROOM

The classroom should be made as attractive as possible without undue expenditure of money. Good taste in classroom decoration can be secured inexpensively. Brightly colored unframed pictures of interest to children are easily obtained from magazines and children's picture books. Mounted on construction paper of uniform size and color, harmonizing with the color scheme selected for the season, and hung on a level with pupils' eyes where possible, will aid in creating an attractive classroom atmosphere. The pictures, or the mountings only, may be changed throughout the year, if desired. Orange is a suitable color for the fall season. Seed pods, commonly called "Japanese Lanterns", add color and require little attention. Ivy and other vines that grow easily and which require little care may be placed at or near the windows in hanging baskets or other receptacles made by the children. Flowering plants and ferns are not suggested because of the difficulty in keeping them over vacation periods throughout the school year.

Window curtains and table scarfs, when used, should harmonize with the color scheme selected. Stenciling adds to their attractiveness. Such articles, however usually involve the expenditure of the teacher's money, a practice which sometimes establishes an unfortunate precedent. Appreciation will be greater if the purchase price is earned by the children.

CARE OF CLASSROOM

The pupils should be responsible for the care, orderliness, and cleanliness of the classroom, except such service as, in the teacher's judgment, should be rendered by the janitor. Regular duties should be assigned to the pupils, in accordance with age, sex, and ability, and when proficient in one duty, each pupil should be given an opportunity in another.



Individual Bins for Unfinished Handwork

Frequently a chart is displayed in special classrooms, listing duties assigned to the pupils as illustrated below:

CARE OF CLASSROOM

Pupils

Duties

Fenton	May dust the classroom chairs
Linwood	May dust the library chairs
Stella	May dust the model store
Charles	May dust the library books
Helen	May dust the looms and victrola
Earl	May dust the window sills
Betty	May water the flowers and feed the fish
Harry	May dust the pupils' desks
Carl	May sweep the cloak room
Stephen	May check the calendar
Edward	May sweep the floor
Frank	May wash the blackboards
George	May clean the erasers
Jim	May take charge of the tool closet
Alice	May stay after school to help

Opposite each "duty" there is a slit in the poster sufficiently long to insert a card containing a pupil's name. Primary word and sentence building charts may be adapted to this purpose. Names alternate with duties in accordance with the teacher's judgment. Duties are assigned daily or weekly. If assigned daily, the chart is a center of interest to the pupils to learn their assignment for the day.

Posters, in general, add interest and attractiveness to the classroom, though their use is limited by regulations prohibiting the driving of nails into the walls. In such cases, one alternative is to fasten the poster temporarily with adhesive tape to wall surface or to blackboard surface not needed for instruction.

PART III
CLASSROOM MANAGEMENT AND TEACHING
PROCEDURES

DAILY PROGRAM

A CAREFULLY planned and executed daily program, with clearly defined objectives, is a fundamental necessity in establishing an optimum educational opportunity for every pupil in an orthogenic backward class. The type of organization, i. e., a single unit orthogenic backward class or a multiple unit orthogenic backward center¹, the ages of the pupils, their mental classifications and needs, and the homogeneity of the group, will determine the daily schedule.

GROUPING THE CLASS

After ascertaining the educational achievements of the pupils assigned to an orthogenic backward class, as described on page 16, the teacher should classify the pupils into groups for instructional purposes.

A single unit orthogenic backward class, with a wide range of chronological ages and of mental levels, will require more sectioning into groups of approximate equal attainments and similar methods of learning than a more chronologically and mentally homogeneous group of the same size in a multiple unit or center. For the former type of class, at least three sections, perhaps four, will be necessary. Likewise in a center, there will be sufficient differences in achievement and in ability to achieve to warrant the sectioning of the class into smaller groups. Such classification will facilitate whatever individual adaptations are necessary on a diagnostic basis. Furthermore, the personnel of the groups may not be identical for the several activities.

The suggestive daily program included in the appendix of this bulletin for the general guidance of teachers is planned for a five hour day and for four sections or groups:

- Group I — Pupils of lowest ability.
- Group II — Pupils of low ability.
- Group III — Pupils of intermediate ability.
- Group IV — Pupils of highest ability.

LENGTH OF SCHOOL DAY

The length of the orthogenic backward class school day should equal that of the regular grades of the school district and should not be less than five hours for the following reasons:

1. Pupils, as a rule, before assignment to an orthogenic backward class, have had an unsatisfactory school experience and the

¹ "Single unit" designates an orthogenic backward class in a school building or school system in charge of a single teacher; a "multiple unit" comprises more than one class usually with departmentalized instruction.

number of years they might have spent under adequate instruction have been curtailed.

2. Usually, the school careers of these children terminate at the age of sixteen.

3. The acquisition of literary knowledges and skills, even to a lesser degree, requires relatively more time than normal children require.

4. They must be taught much that the normal child learns without instruction through contact with its environment.

5. They require longer periods of training for the development of social controls and character trends necessary for adequate community adjustment.

In situations where pupils remain at school during the luncheon period and where a luncheon is prepared for them under the supervision of the teacher or teachers, the luncheon period may be counted as "time taught", as this period will then provide opportunities for instruction in the preparation of food, table manners, eating habits, and desirable social relationships.

TIME ALLOTMENT

In the formulation of a daily program, time must be suitably apportioned to the three types of instruction:

1. Manual Activities or Handwork.
2. Health and Recreation Activities.
3. Literary Knowledges and Skills.

MANUAL ACTIVITIES—Even if the curriculum of the regular grades is limited to the minimum essentials and administered at a slow rate, it does not meet the needs of the mentally backward and the mentally subnormal. To accomplish this end, the daily program for the orthogenic backward should emphasize manual activities and minimize academic instruction. The only exception to this rule is in the case of the young orthogenic backward children who may be capable of assimilating with profit a somewhat greater amount of academic instruction and whose physiological development limits the scope of their manual activities. For them the time allotted to academic subjects may exceed that apportioned to manual training during the first few years. For all others, the amount of time for manual training should be increased over that of academic instruction until for the older group it amounts to at least three-fifths of the school day.

There may be some instances where pupils, who are approaching the termination of their special class careers and who, in the judgment of the teacher, can profit no further from academic instruction, may be permitted to spend even a greater portion of the day on handwork, correlating their knowledge of the three R's with the work in hand wherever opportunity offers.



Diversified Manual Activities Adapted to Individual Abilities
(Note Equipment for Cooking)

A larger portion of the school day should be allotted to manual activities than to academic instruction because:

1. The mentally backward and the mentally subnormal are definitely limited in ability to assimilate and to use, to any great extent, the content of a literary course of study; as a rule they definitely demonstrated this inability while in the regular grades.
2. The social and intellectual levels at which they function require comparatively little of the technical academic skills.
3. The mentally backward and the mentally subnormal approximate normality in their motor responses and their future livelihood depends on the training and exercise of these abilities.
4. Through manual activities, the orthogenic backward may be trained in those mental abilities that are fundamental to adequate participation at their intellectual and social levels.

All manual activities should be progressive for each pupil. When a pupil has satisfactorily completed an article of handwork, he is ready for the next higher process or for an entirely new activity. Usually, handicrafts that have utilitarian values enlist the interests of the pupils much more than articles extraneous to their needs and experiences. When introducing new ideas or processes in the construction of articles, models or samples should be available to stimulate greater interest and effort and to set up achievement standards.

The choice of objects to be made during the manual activities periods and the materials for their construction should be a matter of

pupil choice as far as possible. However, to avoid mere waste of material, the teacher must feel confident that the child is capable of performing the operations involved with an acceptable degree of success. Pupils should not be permitted to attempt the construction of articles beyond their general abilities. If tasks are adapted to the abilities of the pupils, the completed exercise should be a commendable example of the child's own work—not one finished by the teacher or a more capable pupil. Exhibiting handwork that is not completely pupils' work creates in the minds of parents and patrons a false impression, false values in the minds of pupils, and sets an undesirable and dishonest example for the latter.

It is appropriate to explain to the pupils, during manual activity periods, facts of science as they apply to the operation of articles they have constructed. (Some of the older boys in one of the special class centers built a replica of an elaborate weathervane they had seen in a yard near the school and were perplexed and curious to know how it operated). These periods may also be used appropriately for developing appreciation, as well as the application, of the principles of art as they relate to size, form, and color combinations. Just as every written exercise should be a lesson in penmanship, so every article constructed or made by the pupils should be expressive of artistic, as well as of utilitarian, values. School journeys and nature study trips in connection with the development of projects or units of study may be considered as activities properly belonging to this period.

The Individual Manual Activities Progress Record form included in the appendix of this Bulletin will aid special class teachers in:

1. Checking and evaluating each pupil's handwork at the end of the manual activities period each day.
2. Noting the needs of certain pupils for additional instruction.
3. Planning and preparing new activities for pupils who have satisfactorily completed an assignment.

Additional handwork involving noiseless operations are sometimes assigned to pupils as seatwork when their academic assignments for the day have been completed.

HEALTH AND RECREATION ACTIVITIES—Health and physical education are important for normal children. They are even more important for the orthogenic backward. The prevalence of mal-nourishment among these pupils and the limited facilities in their homes for maintaining desirable standards of personal hygiene indicate that the entire daily program should cater to the building of better bodies and the development of good health habits.

Mid-morning lunches, relief or rest periods properly distributed throughout the day, and the correction of postural defects through appropriate exercises, require emphasis in the daily program for the orthogenic backward.

The personal appearance, as well as health of these pupils, will be improved by the proper use of tooth brushes, combs, and nail files, kept in the classroom in receptacles provided for them. No school

work should be attempted with unclean hands. No occasion should be lost by the special class teacher to apply the principles of health and safety. It may be advisable in some situations to provide bathing facilities for both boys and girls.

A daily health record, with some form of meritorious recognition, stimulates the achievement and maintenance of health standards. The criterion must be within the reach of every pupil in order that such recognition may be administered with fairness.

The importance of health and physical education and the need of profitable recreation, in the lives of the orthogenic backward necessitate the apportionment of at least one hour daily to this phase of instruction.

LITERARY KNOWLEDGES AND SKILLS.—The skill and proficiency attainable by orthogenic backward pupils in the fundamentals of the tool subjects usually is so limited that they are of minor importance in the pursuit of gainful occupations. However, each child enrolled in an orthogenic backward class should be granted an opportunity to acquire literacy for practical and individual needs. The amount of time given to this phase of the daily program should not exceed two hours, excepting, as previously stated, in the case of the younger children. While this time allotment has been reduced to a minimum, actually it will be greater than indicated on the daily schedule, since abundant opportunity is provided for the development and application of the 3 R's by correlating them with handwork in the reading of directions and specifications, in measuring and calculating amounts of material and their cost, and in studying the nature and source of materials used.

CORRELATIVES OF AN ADEQUATE DAILY PROGRAM

In the organization and administration of an effective daily program for the orthogenic backward, the incorporation of the following practices will lessen learning difficulties and provide, as nearly as possible, an optimum educational opportunity for each pupil:

1. The unification or correlation of all instruction insofar as feasible and practical in the development of projects or integrated units of study, directly related to the daily social experiences of the pupils.
2. The apportionment of relatively long periods, or blocks, of time to related subject materials and activities, resulting in economy of time and more effective teaching.
3. The sectioning of the class into groups of approximate achievement levels for daily instruction in oral and written expression, spelling and number facts.
4. The teaching of the class as a unit in other literary subjects, the necessary adaptations being made by the teacher to compensate for individual differences.
5. The profitable occupation of each pupil with correlated seatwork or manual activities throughout the day when working independently.

6. The use of the most effective learning periods of the day for the most difficult subjects.
7. The arrangement of subjects so that a difficult subject will be followed by a relatively easy one.
8. Limiting academic instruction to brief teaching periods.
9. Providing short relief periods between academic teaching periods.

These factors are incorporated in the Suggestive Daily Program for a Single Unit Orthogenic Backward Class which will be found on the inside of the back cover. The time allotted in this program for literary subjects and manual activities applies for pupils of intermediate ability in a single orthogenic backward class. Variations in the allotment of time to the several subjects of instruction will be necessary for pupils of lower and higher ability as discussed elsewhere in this chapter.

CORRELATED TEACHING DEVICES

An abundance of concrete teaching devices, or visual aids, and seatwork to supplement and reinforce instruction for those pupils who are not receiving the teacher's direct attention, are also fundamental to a successful administration of the daily program.

Many of these devices cannot be purchased but must be made by the teacher, or preferably by the pupils, from magazine advertisements and other current literature. As the construction of teaching devices by the pupils is rich in educational opportunity—measuring, cutting to line, folding, pasting, hectographing—the teacher should assign this work to the pupils whenever possible.

Seatwork devices should be organized and arranged in such a manner that pupils may be able to procure the assignments for each subject without assistance from the teacher. This provides opportunity for training in initiative and independence.

Seatwork, like all other activities of the day, should be progressive. After a seatwork exercise has served its purpose, it should not be repeated in identical form. Placing the pupil's initials on the back of seatwork envelopes or cards, after the desired results have been obtained, will tend to prevent a repetition of the task.

All seatwork assignments should be checked by the teacher.

LESSON PLANS

The differentiated and individualized instruction of an orthogenic backward class requires careful planning and preparation by the teacher of lessons and supplementary teaching materials.

The suggested lesson plan forms found on pages 73-75 of the appendix are offered as a device to aid the teacher in organizing a more effective daily procedure in connection with the development of projects or integrated units of study where the content of instruction is based largely on the daily environmental experiences of the pupils and information acquired from supplementary sources. If these blanks are reproduced, the amount of space should be increased proportionately to permit adequate notations and references.

PROJECTS OR UNITS OF STUDY

Orthogenic backward children, due to their limitations, cannot be expected to develop projects with the same intellectual curiosity as normal children, but, in spite of these limitations, the project or unit of study is a valuable educational device for them, provided the

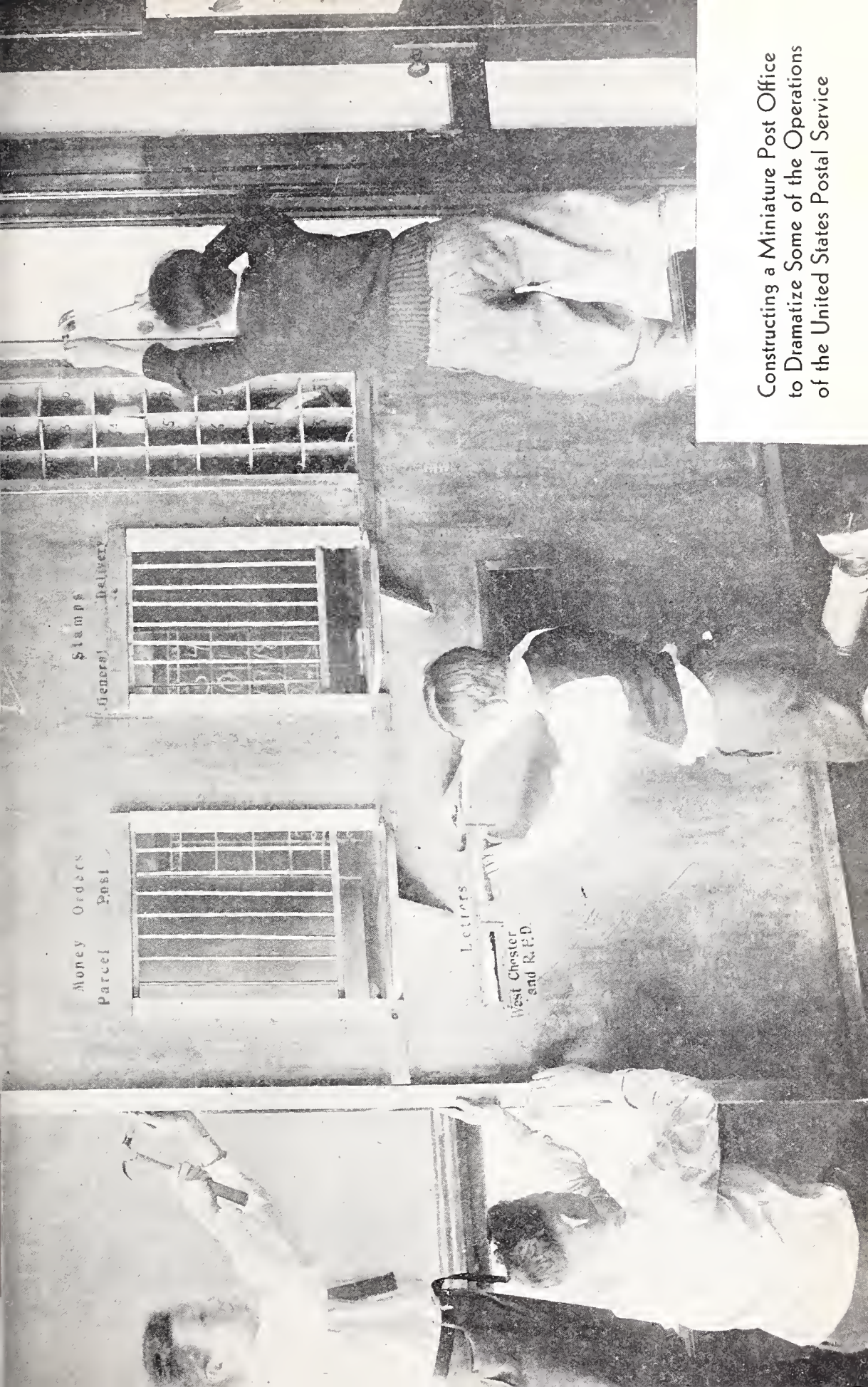


"LEARNING
BY DOING"

teacher evaluates in advance the present and potential abilities of her pupils and selects a project having the desired possibilities for growth.

SUITABLE PROJECTS

1. The subject matter of the selected project should be closely related to the daily experiences of the pupils and appropriate for their social and mental levels.
2. It should appeal to the interests of the pupils, enlist their ready cooperation, and hold their attention sufficiently long to develop fully all educational possibilities.
3. The project should supply a present need and anticipate a desire, giving opportunity for application of the knowledge while acquiring it, as well as direct practical training for life. (A special class boy, on learning how to send a money order, no longer needed to ask someone to fill out one for him each night when he returned the amount due the news dealer for



Money Orders
Parcel Post

Stamps
General Delivery

Letters
West Chester
and R.F.D.

Constructing a Miniature Post Office to Dramatize Some of the Operations of the United States Postal Service

papers sold after school. Thus a present and permanent need was supplied and the development of the project anticipated the desire).

4. The project should provide sufficient related activities for full participation of every pupil.

5. It should offer opportunity for group cooperation (training in team work) sustained concentration, observation, and continuity of application.

6. It should offer opportunity for pupil initiative, self-expression, and for progressive development in ability for performances of increasing complexity.

PRELIMINARY OUTLINE OF PROJECT AND OTHER PREPARATION

Having selected an appropriate project or unit of study, the teacher should prepare in advance an outline including:

1. General and specific objectives.
2. Correlated content for the several class sections.
3. Correlated teaching devices.
4. Correlated manual activities.

Preparations should include also:

1. Collecting illustrative literature and concrete materials related to project.
2. Constructing introductory teaching devices and correlated seatwork.

Definite assignments of work should be made regularly, the pupils being held responsible for readily accessible information and related materials. The more the pupils contribute, the more value the project will have for them.

Throughout the development of a project, the teacher should keep for reference purposes a record of correlated topics, subjects, and arithmetical problems, of school journeys, dramatizations, and other events, as well as sample copies of all composition booklets, spelling booklets, and other devices resulting from the study.

INTEGRATION OF SUBJECT MATTER

Major projects usually contain possibilities for integrating or correlating all the subjects of the daily program: viz., oral and written English, reading, arithmetic, spelling, penmanship, geography, history, civics, health, physical education, plays and games, art, music, and manual activities. The more complete the integration, the greater will be the pupil appreciation of purpose and meaning of instruction.

DURATION

Projects will vary in the length of school time required for their development in proportion to their possibilities for producing learning situations. A full school year may be necessary to cover the educational implications of a project on The Home, whereas a study on American Indians would probably cover not more than four or

six weeks. When projects extend over an entire term or more, the continuity of the study should be broken at intervals for appropriate holiday lessons and observances.

CULMINATION

Every project should culminate in a play or other suitable exercise. A tentative date for the climax should be fixed by the teacher several weeks in advance and the pupils encouraged to complete assigned tasks, specially the manual activities, within the specified time.

EVIDENCES OF GROWTH

On completing a project, the teacher should evaluate the outcomes in terms of acquired attitudes, habits, skills, and knowledge. Such an inventory of achievements usually counteracts the discouragements the teacher has experienced and supplies a basis for the selection of a succeeding unit of study.

CIRCULATING PORTFOLIOS

A loan collection of project portfolios is available in the Division of Special Education, Department of Public Instruction, for circulation to orthogenic backward teachers on request. These portfolios contain descriptions of projects, together with samples of reading booklets, teaching devices, and correlated seatwork created in connection with them, that have been developed in orthogenic backward classes in Pennsylvania. The faithful reproduction of projects from these portfolios is not contemplated. Each project or unit of study should be a new creation replete with local color.

Portfolios have been assembled on the following subjects:

The Home	Transportation
The Farm	Health Education
The Grocery Store	Safety Education
The Post Office	Airports and Airplanes
The Circus	A Study of Birds

A description of a project on The Home is included in this Bulletin because of its appeal to universal interest and to illustrate the many possibilities for:

1. The utilization of concrete living situations for instructional purposes.
2. The integration of subject materials.
3. The motivation of literary subjects through manual activities.
4. The adaptation of instruction to the several ability levels.
5. The construction of correlated teaching devices and supplementary seatwork.



Front Interior View
of the Miniature House

A HOME PROJECT

The following description of a home project, as developed by Mrs. Katherine Hazlett, Monaca, Pennsylvania, with the seven girls and eleven boys of her special class, is given to illustrate the application of the project or "unit of study" method of teaching the orthogenic backward. The enrollment of this class included a wide range of chronological ages—8 to 17 years—and of mental abilities—from middle grade mental defective to mentally inferior pupils. The class was grouped into three sections—low, intermediate, and high—the personnel of the sections varying for the several subjects of instruction.

GENERAL AIM.—To provide experience which would establish a background to aid each pupil in fitting his own life into his surroundings or to choose surroundings to which his capacities were suited.

SPECIFIC AIMS

1. To provide information on house planning.
2. To provide information on house construction.
3. To provide information on house furnishing.

Miniature House Constructed by an
Orthogenic Backward Class, During
the Development of the Home Project
Described in the Text



Back Interior View of
the Miniature House



4. To provide information on practical arts used in the building trades.
5. To provide information on household arts.
6. To provide experiences which tend to arouse the feeling of need for the tool subjects and the acquisition of skills.
7. To teach appreciation of cleanliness and beauty in the home.
8. To develop a better understanding of the duties and responsibilities incident to family relationships.

LAUNCHING THE PROJECT.—Class discussions on shelter, initiated by the teacher, led to school journeys to observe the types of homes in the neighborhood: single, double, duplex, bungalow, and apartment; the materials used in wall construction: wood, shingle, brick, stone, concrete, stucco, pebble dash and cinder block; sources and preparation of building materials: lumber, brick, stone, sand, concrete and plaster; to observe types of workmen on houses under construction in the neighborhood: contractors, excavators, masons, bricklayers, carpenters, plumbers, plasterers, painters, electricians and paperhangers. Prior to each journey, Mrs. Hazlett secured permission from the proper authorities to bring the pupils; she prepared an outline of the items to be brought to their attention; and those pupils who could write were instructed to take paper and pencil for notes. On these school journeys, attention was called also the location of houses and the placement of windows, doors, porches, steps, and chimneys. A number of re-visits were made by individual pupils to check the construction of their model with the construction of a real house.

BUILDING AND FURNISHING THE MINIATURE HOUSE.—A discussion on building a miniature house in the classroom resulted in devising ways and means to procure the necessary materials and in dividing the class into working units, the work being assigned according to the abilities of the pupils.

On request, a local grocery store furnished the special class with a large quantity of orange crates, which were stored temporarily in the basement of the school. Prior to starting the construction of the miniature, the pupils experimented in building shelves and modernistic bookcases from these crates. Then, using crates to determine the layout of the rooms, the pupils decided to build a two-story, eight-room house. A plan for each story was drawn on the blackboard, with all necessary measurements indicated.

One of the older and more capable boys, whose mother was building a home in the neighborhood, was elected by the class as contractor and boss carpenter of the miniature. Committees were appointed for each activity, the work of building and furnishing the miniature being distributed as follows:

OLDER BOYS	Building the miniature house.
OLDER GIRLS	Making rugs, linoleum (cardboard covered with 1" squares of colored paper and shellaced), curtains, drapes, cushions, towels, mops, bedding, (mattresses, sheets, pillow cases, quilts, comforts, bed spreads) lamps, and lamp shades.
YOUNGER BOYS AND GIRLS	Constructing wooden furniture, bathroom fixtures (carved from soap) pictures, mirrors, miniature library books, paper flowers, and raffia grass for lawn.

Parallel with the building and the furnishing of the miniature, the boys and girls made rugs, towels, dresses, aprons, and many other articles for their own use and for the use of others.

Throughout the development of the project, the pupils brought to school quantities of trade journals, such as *The American Builders' Magazine*, *The Carpenter*, and *The Mason and Plasterer*; mail order catalogs of The Sears, Roebuck Company and The Montgomery Ward Company, as well as many copies of *The Ladies' Home Journal*, *Pictorial Review* and *Good Housekeeping*. These were a rich source of information, as well as of pictures of tools and materials for illustrating reading booklets and arithmetic seatwork problems.

WALLS, FLOORS AND PARTITIONS.—Having determined the type of house, the number and arrangement of rooms, the location of windows, doors, stairways, archways, porches and chimneys on the plans, and having assigned the several items of work, the next step was to adjust the plans to the size of lumber salvaged from the orange crates. The result was a square house equivalent in size to four orange crates standing on end. Many crates were completely knocked down and the best wood selected. The construction of the miniature followed accurately the plans and specifications on the blackboard. A frame was erected first; then the walls were built solid with openings cut for windows, archways, and doors. The front and back walls were removable.

FOUNDATION.—The construction had not progressed far when one of the pupils called attention to the fact that a foundation wall had not

been provided and that their house should resemble a real one as near as possible. Small blocks of wood were cut promptly, painted and shellaced to resemble bricks. Putty was used to cement them together for the foundation.

CHIMNEY.—The next problem to be solved was the accurate placement of the chimneys in relation to the kitchen stove and living room fireplace.

ROOF.—A wooden gabled frame was covered first with sheathing and over this was placed layers of shingles cut from cardboard and stained.

EXTERIOR WALLS.—Weather boarding placed crosswise and overlapping as in real frame houses was nailed to the frame. All boards were carefully cut to size and sanded. All holes were filled with putty before being placed in position.

GLAZING.—Glass was cut to size for the windows and held in place by one-half inch wooden strips. Window frames, door jams, and baseboards were properly cut and carefully placed.

PAINTING AND PAPERING.—Class discussions as to suitable interior and exterior painting and wall paper for the several rooms preceded the painting and the papering.

The house was then complete and ready for its furnishings. Discussions on furniture and furnishings considered the appropriateness of floor coverings, size and proportion of furniture, and color schemes in furnishing the several rooms of the house.

When the miniature was completely furnished, there were many discussions on the care and order of the home and the duties and responsibilities of each member of the family. The miniature afforded opportunities for practical lessons in cleaning, washing, ironing, convenient and attractive arrangement of furniture, and renovating.

INTEGRATING INSTRUCTION

The integration of all subjects of instruction—reading, arithmetic, spelling, geography, history, language, music, art, health and recreational activities, and manual activities was practiced throughout the development of the project as follows:

READING.—The term “reading” as used in this bulletin includes oral and written English and spelling, as well as oral and silent reading.

The reading content for the entire class was based on the experiences of the pupils in building the miniature, on school journeys, on related information imparted by the teacher or gathered by more capable pupils from supplementary books and magazines.

Reading for the Low Division of the class resulted in a “dictionary” booklet of words, taught through direct association with objects, and simple sentences composed by the children on the family, the home and its furnishings, food and clothing—the words and sentences being appropriately illustrated by magazine cutouts.

These reading exercises were supplemented by the following correlated seatwork:



Activities Correlated With a Home Project

1. Matching words and pictures.
2. Matching phrases and pictures.
3. Directive reading, such as "Draw a house and color it yellow."

The reading booklet developed by the Intermediate Division entitled "Our Home" included a series of stories on the function and furniture of the several rooms of the house, table manners, modern inventions in the home, and "How to Keep the Family Happy" or "Safety in the Home." These stories were developed orally with the pupils while they were furnishing and equipping the rooms of the miniature. Where necessary help was given for accuracy of expression. Each sentence in turn was written on the blackboard and read by the pupils, new words being taught as occasion required. The story was copied on tablet paper, corrected if necessary, and used as a model for copying it into reading booklets made by the pupils during industrial arts periods. The length of a lesson was determined by the abilities of the pupils and the daily time allotment for this subject.

The following is a sample of reading lessons developed with the Intermediate Division of the class.

THE KITCHEN

Mother spends most of her time in the kitchen. We help her when we get home from school.

We prepare all the food for our meals in the kitchen. We cook, bake, wash and dry dishes, scour pans, polish silverware, and sometimes iron there.

The kitchen should be the cleanest room in the house. Everything must be put in the right place to make the kitchen look tidy.

Here are some things which will keep our family in better health if we

remember them and do them. Clean the kitchen well after every meal. Sweep the floor. Scrub or mop the floor more than once a week. Rinse the dishes with clean hot water. Use a clean tea towel every day. Wash hands before touching dishes or food. Empty the garbage once a day and wrap tightly in paper before taking it to the garbage can in the backyard.

The following correlated seatwork supplemented the reading exercises of this division:

1. Matching words and pictures.
2. Matching phrases and pictures.
3. Incomplete sentences.
4. Comprehension questions.
5. Classifying words.
6. Directive reading.
7. True and false statements.
8. Multiple choice exercises.
9. Supplementary reading—"Our Play House"—Dobbs.

Reading for the High Division comprised a fully illustrated booklet entitled "The Workmen on Our House" with chapters on each of the following topics:

The Work of the Contractor and His Plans.

The Work of the Excavator and His Tools.

The Work of the Mason, His Tools, and Materials.

The Work of the Carpenter, His Tools, and Materials.

The Work of the Plumber, His Tools, and Materials.

The Work of the Electrician, His Tools, and Materials.

The Work of the Tinner, His Tools, and Materials.

The Work of the Plasterer, His Tools, and Materials.

The Work of the Painter, His Tools, and Materials.

Our Trip to the Brickyard.

At the Brickyard.

Lumber and Lumbering.

Building Materials: Concrete, tin-iron-copper, glass, plaster, paint.

The subject matter of the several chapters was developed orally first, then assigned for written composition. When completed, each child in turn read his composition to the class. The one selected by the class as the best was written on the blackboard by the teacher and copied by the pupils into their booklets. These compositions or stories were reviewed as reading lessons, the pupils exchanging booklets for practice in reading the penmanship of others. Booklets were carefully supervised to detect errors in punctuation, penmanship, and spelling.

The following are samples of reading lessons developed with the High Division of the class.

THE CONTRACTOR

If we want to build a house we go to a contractor. He has papers with drawings of houses on them. He calls these his plans. We talk to him about the kind and size of house we want and the materials we want him to use. Then he tells us how much it will cost.

The contractor hires tradesmen to carry out the plans of building our house. He hires the excavators, masons, carpenters, tanners, plumbers, electricians, plasterers, and painters. He also orders the supplies which each of these men need in order to do their part of the work. He must oversee everything which his men do so we will be satisfied with our house.

AT THE BRICKYARD

Mr. Marshall, the boss, met us at the top of the hill. He told us to be very careful, to stay close to him, and not to touch any of the machinery because it was a dangerous place for children who didn't obey. The rule of safety first should always be obeyed.

The clay to make bricks is moved from the hill near the brickyard. It is a hard gray rock. It is dumped into a machine which cracks it into smaller lumps. These go down a chute into a grinder where there are great wheels grinding over a revolving disc. We watched this machine grind the clay into a fine soft powder. It is sifted and ground several times before it is ready for the mixer.

The elevator then takes it to the machine where it is mixed with the right amount of water. Molds for making five bricks at one time are put into the machine which automatically puts the mixed clay into the sanded molds and presses it tightly into the form of five bricks. The bricks pass out of this machine and are put into standing cars by men who are ready to grab the bricks as they come out. They come out of the machine fast enough to keep the men very busy.

The car of bricks is then put into a drying tunnel for two days. The temperature at first is eighty degrees. It is slowly increased. The next process is the burning. This is done in a kiln for three days with a very high temperature. The bricks are now ready to be taken out and sold to contractors for building.

The following types of correlated seatwork supplemented the reading exercises of this division:

1. Matching words and phrases.
2. Incomplete sentences.
3. Comprehension questions.
4. Classifying words.
5. Directive reading and coloring.
6. True and false statements.
7. Multiple choice exercises.
8. Who, What and When Problems.
9. Riddles.

ARITHMETIC.—This unit of study offered many avenues of approach in teaching number facts and problems through direct association with concrete materials. The following outline indicates the adaptations for the several divisions of the class.

C Section—Low Division

1. Measuring parts of house, furniture, and furnishings with a 12" ruler to teach inches and twelve inches equal one foot.
2. Counting from one to —— utilizing hectographed sheets, each containing a series of pictures of small houses showing doors, windows, and chimneys; of bricklayers laying bricks; of carpenters sawing boards; of mantel pieces decorated with clock and vases. These were used for counting the number of houses, doors,

windows, chimneys, bricks, boards, carpenters, clocks, and vases on one page; to find the number on one line; to find the number on three or more lines, et cetera. Directions were given orally; answers were written on separate papers.

3. Teaching clock facts using a clock dial.

4. Teaching calendar facts.—Days and weeks were identified on calendar.

5. Teaching identification of money:—cent, nickel, dime, quarter, half-dollar.

B Section—Intermediate Division

1. Measuring parts of the miniature house and of the classroom to teach feet and yards, using yard stick.

2. Teaching time with clock dial.

3. Teaching time in relation to wage problems.

4. Teaching calendar facts in relation to days and weeks of work.

5. Teaching dollar and cent marks.

6. Solving problems related to the buying and selling of tools and materials.

7. Figuring the cost of building a house (even amounts in dollars).

8. Figuring the cost of furnishing a house (uneven amounts in dollars and cents).

A Section—High Division

1. Solving salary problems based on hourly and weekly rates.

2. Solving problems on cost of materials and tools used in building a house.

3. Solving story problems on furnishing a house.

4. Dramatizing the buying and selling of furniture for miniature house.

SPELLING.—The spelling words for each group were selected from the reading lessons on the basis of a pre-test which determined the words to be taught. After the words were thoroughly learned, each child copied them into his individual spelling booklet.

GEOGRAPHY AND HISTORY.—Related geographical and historical facts were presented to the class as a single group. Stories from, "Round the World with Children" and items of general information on the following topics were read to them:

1. Source of building materials.

2. Evolution of the home in America.

3. Homes of other peoples.

These were supplemented by discussions in which the pupils volunteered additional knowledge gleaned from outside experiences. They

also constructed a sandtable model depicting the influence of climate on types of homes, including homes of Indians, Eskimos, and South Sea Islanders.

LANGUAGE.—Formal language lessons and exercises were presented generally in the form of familiar games adapted to the House Project, e. g., names of articles of furniture, tools, and names of building materials were used in playing. "Upset the Fruit Basket", "I am thinking of something———", "I see something———". Multiple choice exercises were used to teach correct use of "sit" and "set", "lie" and "lay", "a" and "an", "nail-nailed", "saw-sawed", "drill-drilled", "fix-fixes", "paint-paints", "has-have", "saw-saws", et cetera.

MUSIC.—Songs relating to home and activities in the home:

A—Sheet music brought in by pupils.

1. Home Sweet Home.
2. My Old Kentucky Home.
3. That Tumbledown Shack in Athlone.
4. The Arkansas Traveler.
5. Here Comes the Sun.
6. Home on the Range.

B—Music Texts.

1. Hollis Dann Music Course Book I.
Page 66—Tick-tock.
Page 78—My Father was a Carpenter.
Page 93—Round and Round the Village (Substitute Play House for Village throughout the song).
Page 94—The Mulberry Bush.

(Last two were used as game songs in physical activities).

2. Elementary Music (Music Education Series).
Giddings, Earhart, Baldwin—Ginn and Company, New York City.
Page 48—Home.
Page 102—A Cradle Song.
Page 116—Baking.
Page 120—Boxes.
Page 127—The Old House.
Page 142—Your Mother's Heart.
Page 160—Chimney Smoke.
Page 189—Old Folks at Home.
3. Introductory Music (Music Education Series).
Giddings, Earhart, Baldwin—Ginn and Company, New York City.
Page 159—Homes.
4. The Eleanor Smith Music Course—Book II.
Eleanor Smith—American Book Company, New York City.
Page 69—Clock Song.

Page 39—On the Ladder.

Page 81—Spring Cleaning.

5. Songs of the Child World No. I.

Riley and Gaynor—The John Church Company, New York City.

Page 13—The Little Housewife.

Page 14—The Song of Iron.

Page 116—Weaving.

Page 117—Sewing Song.

Page 117—Norman's Work is Finished.

C—Toy Orchestra

Simple rhythm exercises in 2-4, 4-4, 3-4 time.

1. Interpretation of carpenter's hammer.
2. Interpretation of carpenter's saw.

D—Victrola

- A. Play home songs for music appreciation.

ART

- A. Subject—limited to house and its related activities.
- B. Activities according to ability.

1. Tracing.
2. Drawing.
3. Cutting.
4. Coloring.
5. Mounting.
6. Bookbinding.
7. Cutting and mounting colored paper to illustrate methods of brick-laying.
8. Designing wall paper, linoleum, rugs, curtains, linen covers, et cetera.
9. Determining color combinations.
10. Modeling small clay articles for house, such as vases and lamps.
11. Carving kitchen sink and bathroom fixtures out of soap.
12. Constructing advertising posters of finished house.

PHYSICAL EDUCATION

- A. Singing games.

1. Round and Round the Village (Playhouse).
2. The Mulberry Bush.
3. When I was a Shoemaker (Excavator, carpenter, brick-layer, plasterer, et cetera).

- B. Other games.

1. Old Women from the Wood (Limited to duties in the household).
2. Trades (Limited to those related to Unit of Study).

3. Fruit Basket (Tool chest—names of tools instead of fruit), Sewing basket—(Contents of basket for names), Pantry—(Articles furnishing same).

4. Pass the Clothes Pins—(“Pass the nails” or “spikes”).

5. Do This, Do That—(Motions of workmen as sawing, hammering, climbing, papering, painting, et cetera).

6. Going to Jerusalem (Renamed School Journey Game).

C. Imitative Play.

1. The Pilgrims—(Pupils seated on their desks).

a. Sailing for a new home—arms moving slowly in air to represent sails.

b. Waves dashing against ship—arms swinging from side to side gracefully in time to slow waltz music or song.

c. Landing of Pilgrims—Climbing down from desks to seats, then to the aisles. Kneeling. (Count for movements).

d. Building homes.

(1) Chopping trees for logs.

(Pupils stand astride, clasp hands, raise arms to shoulder, first left, then right, bend trunk forward and swing arms downward. Repeat exercise vigorously).

(2) Sawing logs.

(Place knee on seat, bend trunk forward and make sawing motion).

(3) Rest at ease.

2. The Bricklayer.

a. Lifting cement bag.

b. Shoveling in the sand.

c. Mixing the mortar.

d. Filling the hod.

e. Carrying the hod up the ladder.

f. Buttering the bricks.

g. Making the wall.

3. The Excavator.

4. The Carpenter.

5. The Plasterer, et cetera.

D. Exercises.

Ladder exercises on real ladder.

a. Climbing up and down.

b. Swinging on rounds of a ladder suspended not too high from floor.

c. Reaching and stretching for objects placed on ladder.

- d. Stepping between rounds, on rounds, and skipping around ladder lying on floor.
- e. Vary "d" for the smaller folks by drawing a ladder on the floor, placing rounds closer.
- f. Vary "e" for more able pupils by drawing rounds at irregular distances.

E. Hygiene.

1. Health chart—daily inspection.
2. Hygiene relating to the house.
 - a. Cleanliness in kitchen.
 - b. Cleanliness in bathroom.
 - c. Cleanliness in bedroom.
 - d. Cleanliness in home in general.
 - e. Cleanliness in surroundings.
3. Safety.
 - a. Rules developed by class in working with tools.
 - b. Safety rules for the home.

OUTCOMES

A. Attitudes.

1. Appreciation of the advantages of cooperative effort.
2. Self-respect and confidence in personal ability.
3. Pride in achievement that commanded the admiration of normal children and their teachers.
4. Greater interest in and an appreciation of the activities involved in the construction, maintenance, and functions of a home.
5. Interest in the source, nature, and cost of materials used in constructing and furnishing a home.
6. Interest in the use of and respect for tools.
7. Interest in the people around them and appreciation of the daily occurrences of their immediate world.
8. A desire to work cooperatively.
9. Increased enthusiasm and cheerfulness in performance in and out of school.
10. Greater appreciation of property values.

B. Habits.

1. Increased accuracy in following directions.
2. Keener powers of observation.
3. More acceptable deportment.
4. Greater care in the use and handling of tools as a safety measure.
5. Formation of desirable health habits with reference to personal hygiene and sanitary care of the home.
6. Increased independence in using reference sources.

C. Skills.

1. Ability to use sketches and plans in the development of a project.
2. Increased ability to manipulate tools and materials.
3. Ability to find related illustrative materials.
4. Ability to read for information on project.
5. Ability for two girls to begin careers as house maids, one as seamstress, and a boy as a helper in a lumber yard.

D. Knowledges.

1. The children gained a knowledge of the importance of working out the details of a plan on paper or blackboard before attempting to execute it.
2. The cost, source, nature, and preparation for use of building materials, such as lumber, brick, stone, concrete, tin, iron, copper, glass, plaster, and paint.
3. The cost, proper care, and use of household furnishings.
4. The proper use and care of tools and household utensils.
5. The type of work performed by each of the building tradesmen.
6. The importance of cleanliness in the home as a health factor.
7. The value of neatness and attractiveness in the home as a factor for happiness.
8. Increased knowledge in the fundamental elementary school subjects correlated with the project.

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SUPPLEMENTARY SEATWORK—HOME PROJECT

The samples of seatwork which follow illustrate the many possibilities for supplementing and reinforcing instruction in literary subjects. Although many of the reading devices partake of the nature of achievement tests, they were used to check the comprehension and application of subject matter taught. They were compiled and used as teaching devices and not as testing devices.

READING DEVICE NO. 1

WORD CLASSIFICATION		
<i>Put the following words in the right columns:</i>		
china closet	dining table	server
davenport	bookcase	cook
frigidaire	eat	end table
piano	visit	serve
buffet	range	bake
towels	read	sink
breakfast set	kitchen cabinet	wash dishes
radio	linoleum	towel rack
Kitchen	Dining Room	Living Room

A variation of this device may be made of oak tag with an envelope attached containing word cards to be placed in the proper columns instead of being written in by the pupils.

READING DEVICE NO. 2

Multiple Choice Exercise

Tools Used in Building

Choose the correct word. Write it in the blank space.

1. The carpenter uses a _____ 1.
shovel plane trowel soldering iron
2. The painter uses a _____ 2.
saw wrench brush square
3. The mason uses a _____ 3.
vice cutting snips trowel
4. The electrician uses _____ 4.
cutting pliers wheelbarrow brush
5. The plasterer uses a _____ 5.
chisel wrench trowel pencil
6. The plumber uses a _____ 6.
wrench plane nail set ladder
7. The tinner uses a _____ 7.
hod shovel soldering iron
8. The excavator uses a _____ 8.
file pincers shovel hammer
9. The bricklayer uses a _____ 9.
bit level screw driver nails

READING DEVICE NO. 3

Multiple Choice Exercise

The Livingroom

Put the correct word in the blank space.

1. In the living room we _____ 1.
eat sleep wash read
2. The living room is used most in the _____ 2.
morning afternoon evening spring
3. The living room is sometimes called the _____ 3.
pantry parlor nursery dining room
4. An _____ joins the living room and dining room of our house. 4.
door hole opening arch
5. A _____ is built in our living room under the staircase. 5.
chimney attic bookcase clothespress
6. Mother should clean the living room _____ 6.
every day every minute every week
7. We go into the living room to sit down when we are _____ 7.
angry clean sick dirty

READING DEVICE NO. 4

Multiple Choice Exercise

The Kitchen

Write correct word in blank.

1. _____ uses the kitchen more than any 1.
brother mother sister father
other member of the family.
2. The garbage should be emptied every _____ 2.
year week day winter
3. Dishwater should be _____ 3.
hot and greasy greasy and cold hot and soapy
4. Silverware should be polished every _____ 4.
week year day summer
5. Clean tea towels should be used every _____ 5.
day hour Tuesday week
6. Clean the sink every day after the dishes have been _____ 6.
broken washed painted cracked

READING DEVICE NO. 5

True and False Exercise

The Kitchen

Write "true" or "false" at end of each sentence.

1. The kitchen should be the cleanest room in the 1.
house because that is where food is prepared. _____
2. The kitchen should be swept after every meal. _____ 2.
3. The dishcloth should be kept looking white and 3.
smelling clean. _____
4. Mother washes her hands thoroughly before she 4.
handles food. _____

READING DEVICE No. 6.

True and False Exercise and Directive Reading

Where the Workmen Work

Write "true" or "false" at end of each sentence.

- | | | |
|--|-------|-----|
| 1. The excavator digs the cellar in the kitchen. | _____ | 1. |
| 2. The electrician puts wires inside the walls. | _____ | 2. |
| 3. The mason builds the chimney from the cellar up. | _____ | 3. |
| 4. The plumber puts the hot water tank in the dining room. | _____ | 4. |
| 5. The carpenter nails the weather-boards on the roof. | _____ | 5. |
| 6. The painter paints the walls of the cellar. | _____ | 6. |
| 7. The tinner puts the furnace in the cellar. | _____ | 7. |
| 8. The plasterer covers the lath with paint. | _____ | 8. |
| 9. The contractor hires men to work in the mill. | _____ | 9. |
| 10. The tinner puts rainspouts on the house. | _____ | 10. |

Something to Do

1. Draw a house.
2. Color the chimney red.
3. Color the foundation red.
4. Draw a door and two windows in front.
5. Draw a long ladder leaning against the roof.
6. Draw a bucket of green paint and a brush at the foot of the ladder.

READING DEVICE No. 7

True and False Exercise and Directive Reading

Workmen and Their Work

Put "Yes" or "No" at the end of each sentence.

- | | | |
|--|-----|-----|
| 1. The contractor builds the cellar. | () | 1. |
| 2. The excavator builds the chimney. | () | 2. |
| 3. The plumber puts the water pipes in the house. .. | () | 3. |
| 4. The electrician puts wires in the house. | () | 4. |
| 5. The painter pays the carpenter. | () | 5. |
| 6. The carpenter lays the flooring. | () | 6. |
| 7. The mason puts the roof on the house. | () | 7. |
| 8. The tinner puts in the furnace. | () | 8. |
| 9. The bricklayer oversees the workmen. | () | 9. |
| 10. The excavator digs the cellar. | () | 10. |

Something to Do

1. Draw a square cellar.
2. Write the word "cellar" above it.
3. Draw a shovel and wheelbarrow near the cellar.
4. Color the shovel handle red.
5. Color the wheelbarrow brown.

READING DEVICE No. 8

Who? What? When?

1. The contractor started building in October.
Who_____What_____When_____
2. The excavator first dug the cellar.
Who_____What_____When_____
3. The mason built the cellar next.
Who_____What_____When_____
4. The workmen began work at eight o'clock.
Who_____What_____When_____
5. This morning the carpenters nailed lath.
Who_____What_____When_____
6. The plumber will put in the sink next week.
Who_____What_____When_____
7. Yesterday the electrician wired the house.
Who_____What_____When_____
8. The plasterer is coming today.
Who_____What_____When_____
9. Last week the tinner put on the roof.
Who_____What_____When_____
10. The painter will varnish the floors very soon.
Who_____What_____When_____
11. Every Saturday the contractor pays his men.
Who_____What_____When_____
12. The owner will move in before February 7th.
Who_____What_____When_____

READING DEVICE No. 9

Multiple Choice Exercise

Furniture and Use of Room in the Home

1. Underline the furniture used in the living room. 1.

bed	davenport	buffet
armchair	kitchen cabinet	rocker
piano	end table	secretary
china closet	bridge lamp	bureau
2. Underline furniture used in the dining room. 2.

end table	bed	davenport
china closet	gas range	server
chairs	buffet	bureau
3. Underline the furniture which may be used in the bedroom. 3.

davenport	dresser
bed	server
chifforobe	dressing table
buffet	china closet

4. Underline what belongs in the kitchen. 4.
- | | | |
|--------|-----------------|---------------|
| buffet | stove | radio |
| sink | kitchen cabinet | breakfast set |
| cradle | refrigerator | fernery |
5. Underline what mother does in the kitchen. 5.
- | | | |
|--------|------------------|------------|
| bakes | cans fruit | combs hair |
| cooks | cleans her teeth | irons |
| bathes | washes dishes | sleeps |

READING DEVICE No. 10

Directive Reading Exercise

(Written work based on an advertising booklet.)

1. Get a sheet of tablet paper and your pencil. 1.
2. Write your name and the number of this card on the first line. 2.
3. Look for a booklet called _____ 3.
(Insert name of booklet.)
4. Copy from the cover of the booklet the uses of this building material. 4.
5. Write a sentence about the picture on page ten. 5.
6. Tell what building materials were used on the roof in this picture. 6.
7. List the drawings that are shown on page thirteen. 7.
8. Put your paper inside the booklet and take it to the teacher. 8.

READING DEVICE No. 11

Directive Reading Exercise

(Written work based on an advertising booklet containing pictures of furnished rooms.)

1. Get a sheet of tablet paper and your pencil. 1.
2. Write your name and the number of this device on the first line. 2.
3. Turn to page nine of _____booklet. 3.
(Insert name of booklet.)
4. Answer the questions below making full sentences. 4.
5. How many rooms can be seen in the picture on page nine? 5.
6. Is the hall floor covered with carpet, cement, or tile? 6.
7. What do you see between the two rooms shown in this picture? 7.
8. How many electric light bulbs will be needed for these rooms? 8.
9. In which room is the mirror? 9.
10. In which room is the desk? 10.
11. Is the banister made of wood, iron, or brick? 11.

READING DEVICE No. 12

Directive Reading Exercise

Something to Color

(The pupils for whom this reading device was prepared were given an advertising booklet containing outline pictures of rooms to be colored).

1. Turn to page nine of _____booklet. 1.
(Insert name of booklet.)
2. Color the walls of the hall gray. 2.
3. Color the tile floor brown and white. 3.
4. Color the cedar chest red. 4.
5. Color the draperies blue. 5.
6. Color the living room walls yellow. 6.
7. The upholstery is orange and blue. 7.
8. Put colored flowers in both vases. 8.
9. Color the electric fixtures brown. 9.
10. A blue rug is on the floor. 10.
11. The mirror has a red frame. 11.
12. The high desk is reddish brown. 12.
13. Color the lamp orange. 13.

(Similar exercises were constructed for the nine other outline pictures in this advertising booklet.)

READING DEVICE No. 13

Matching Exercise

Building Materials

Match the workmen with the materials they use by writing the correct number before the materials.

- | | | |
|---------------------------|---------------------------------|----|
| 1. The plasterer uses | wire and switches | 1. |
| 2. The carpenter uses | pipes and fittings | 2. |
| 3. The tinner uses | walls and ceilings | 3. |
| 4. The electrician uses | lights and outlets in the house | 4. |
| 5. The bricklayer uses | lumber | 5. |
| 6. The plumber uses | chimneys and cellar walls | 6. |
| 7. The plasterer finishes | plaster and water | 7. |
| 8. The electrician puts | bricks and tiles | 8. |
| 9. The mason builds | tin and copper | 9. |

(The difficulty of this exercise may be increased to correspond with information the pupils have acquired.)

READING DEVICE NO. 14

Tradesmen and Their Tools

Write the following names of tools in the right columns.

- | | | |
|-------------------|-------------------|--------------------|
| 1. file | 11. cutting snips | 21. axe |
| 2. shovel | 12. wheelbarrow | 22. bit |
| 3. plane | 13. chisel | 23. screw driver |
| 4. trowel | 14. pencil | 24. brick hammer |
| 5. soldering iron | 15. nail set | 25. brace |
| 6. saw | 16. ladder | 26. level |
| 7. wrench | 17. hod | 27. hand drill |
| 8. square | 18. pincers | 28. cutting pliers |
| 9. brush | 19. marking gauge | 29. knife |
| 10. vice | 20. scaffold | 30. horse |

Carpenter	Mason	Plasterer	Electrician	Tinner	Painter	Plumber

READING DEVICE No. 15

Riddles

1. It is made of wood.
Carpenters use it.
It helps them to reach high places.
They build a new one for each house.
If it isn't built strongly, someone will get hurt.
Children should never play near it.
What is it?
Draw one on a house.
2. I am made of iron.
I have a head and one leg.
I am made in many different sizes.
The carpenter uses me.
A house could not stay together without me.
What am I?
Draw me with two or three of my brothers.
3. My body is made of wood.
Painters use me.
My head is the widest part of me.
My black hair always stands straight.
I must be cleaned before I am put away.
What am I?
Draw the painter using me.
He has dipped me in red paint.
4. It is made sometimes of wood, sometimes of iron.
It has two legs but doesn't walk.
It has two arms also.
It moves only when you hold its arms and push it.
Builders always use it.
What is it?
Draw one full of sand.
Draw a man behind it.
5. I am a large piece of blue colored paper.
I have many white lines on me.
These lines look like many boxes joined together.
I am very important.
The contractor looks at me very often.
He shows me to his workmen every day.
What am I?
Draw me.

LANGUAGE EXERCISE No. 1.

Fill blanks with the correct words, selecting one of the two words in brackets at the beginning of each sentence.

(use—uses)	1. The carpenter ———— a hammer.	1.
(use—uses)	2. The painter ———— a brush.	2.
(use—uses)	3. Plasterers ———— a trowel.	3.
(fix—fixes)	4. Plumbers ———— pipes.	4.
(saw—saws)	5. The carpenter ———— wood.	5.
(fix—fixes)	6. Electricians ———— electric wires.	6.
(paint—paints)	7. Painters ———— the house.	7.
(has—have)	8. Tony's father ———— a wrench.	8.
(mix—mixes)	9. The mason ———— mortar.	9.
(climb—climbs)	10. Tinnners ———— a ladder.	10.
(varnish—varnishes)	11. The painter ———— the floor.	11.
(hang—hangs)	12. The paperhanger ———— paper.	12.

LANGUAGE EXERCISE No. 2.

Fill blanks with the correct word, selecting one of the two words in brackets at the beginning of each sentence.

(a—an)	1. ———— arch joins our living room and dining room.	1.
(a—an)	2. I sit in ———— arm chair.	2.
(a—an)	3. Mother has ———— electric iron.	3.
(a—an)	4. The boys built ———— house.	4.
(a—an)	5. Put the doll on ———— upholstered chair.	5.
(a—an)	6. This is a picture of ———— old cabin.	6.
(a—an)	7. John made ———— davenport.	7.
(a—an)	8. Mother uses ———— electric sweeper.	8.
(a—an)	9. Bernice made ———— igloo.	9.
(a—an)	10. ———— African hut was made by Tony and John.	10.
(a—an)	11. Tony made ———— buffet for our house.	11.
(a—an)	12. Virginia made ———— Indian home for us.	12.

LANGUAGE EXERCISE No. 3.

Fill blanks with the correct word, selecting one of the two words in brackets at the beginning of each sentence.

(sit—set)	1. ———— on the davenport beside me.	1.
(sit—set)	2. Please ———— in the arm chair.	2.
(sit—sets)	3. The sun ———— in the west.	3.
(sit—set)	4. It isn't polite to ———— on the table.	4.
(sit—sets)	5. Mabel ———— the table for her mother.	5.
(sits—sets)	6. The baby ———— in his high chair.	6.
(sit—set)	7. Let us all ———— down.	7.
(sit—set)	8. Please ———— the table for supper.	8.
(sit—set)	9. I can ———— on the floor.	9.
(lie—lay)	10. You should ———— down when you are tired.	10.
(lie—lay)	11. ———— on your bed.	11.
(lie—lay)	12. I will ———— down for a rest.	12.
(lie—lay)	13. Baby ———— in his crib.	13.
(lie—lay)	14. It is not good posture to ———— in your seat.	14.

TYPES OF CORRELATED ARITHMETIC

Addition Problems

2 tiles	4 bricks	5 slates
<u>3 tiles</u>	<u>2 bricks</u>	<u>1 slate</u>
3 shingles	5 nails	2 houses
<u>4 shingles</u>	<u>0 nails</u>	<u>5 houses</u>
4 chimneys	6 sacks	4 doors
<u>5 chimneys</u>	<u>2 sacks</u>	<u>4 doors</u>
1 room	4 rooms	7 windows
<u>6 rooms</u>	<u>3 rooms</u>	<u>2 windows</u>
6 steps	8 boards	3 screws
<u>3 steps</u>	<u>2 boards</u>	<u>9 screws</u>
6 spigots	3 bulbs	5 knobs
<u>6 spigots</u>	<u>5 bulbs</u>	<u>7 knobs</u>

How many hours did the excavator work?

2 hours Monday
 4 hours Tuesday
3 hours Wednesday

How many weeks did the carpenter work?

2 weeks
 1 week
3 weeks

How many men were working on the house each day?

Monday	Tuesday	Wednesday
2 carpenters	3 carpenters	1 plumber
1 electrician	2 plumbers	4 plasterers
<u>2 plumbers</u>	<u>1 tinner</u>	<u>2 tanners</u>

Thursday	Friday	Saturday
2 plumbers	2 electricians	5 painters
2 tanners	4 carpenters	2 electricians
<u>4 carpenters</u>	<u>3 tanners</u>	<u>2 masons</u>

Addition problems, involving use of a clock dial.

1. The carpenter went to work at eight o'clock. He stopped at 12 o'clock to eat dinner. How many hours did he work?
2. The carpenter started to work again at 1 o'clock. He worked until 5 o'clock. How many hours did he work in the afternoon?
3. How many hours did he work all day?

4. The mason was called on a job at 10 o'clock. He worked until 12 o'clock. How many hours did he work?
5. He went back to work at 1 o'clock. He finished everything at 4 o'clock. How many hours did he work in the afternoon?
6. How many hours did he work altogether that day?

Multiplication Problems

Using the following schedules of wages,¹ find the wages of these workmen.

Excavator	.....	65c per hour
Tinner	.....	65c per hour
Mason	.....	70c per hour
Carpenter	.....	75c per hour
Plasterer	.....	86c per hour
Plumber	.....	80c per hour
Electrician	.....	95c per hour
Painter	.....	85c per hour

1. The excavator worked for 8 hours.
2. The mason worked for 6 hours.
3. The carpenter worked for 4 hours.
4. The tinner worked for 7 hours.
5. The plasterer worked for 3 hours.
6. The plumber worked for 5 hours.
7. The electrician worked for 9 hours.
8. The painter worked for 8 hours.

Using the following schedule of wages, how much will each worker receive?

Excavator	.....	\$10.00 per day
Electrician	.....	\$14.00 per day
Carpenter	.....	\$12.00 per day
Mason	.....	\$13.00 per day
Painter	.....	\$11.00 per day
Plasterer	.....	\$12.00 per day
Plumber	.....	\$11.00 per day
Tinner	.....	\$13.00 per day

1. The excavator worked 3 days.
2. The mason worked 6 days.
3. The carpenter worked 5 days.
4. The plumber worked 7 days.
5. The electrician worked 4 days.
6. The plasterer worked 3 days.
7. The painter worked 6 days.
8. The tinner worked 2 days.

¹ Current standard schedules were used in formulating wage problems. This practice should be followed as closely as possible in adapting arithmetic to the abilities of the pupils.

How much would each workman receive?

1. The excavator worked 1 week at \$11.00 per day.
2. The mason worked 2 weeks at \$12.00 per day.
3. The carpenter worked 4 weeks at \$12.00 per day.
4. The plumber worked 2 weeks at \$11.00 per day.
5. The electrician worked 1 week at \$14.00 per day.
6. The plasterer worked 2 weeks at \$13.00 per day.
7. The painter worked 3 weeks at \$10.00 per day.
8. The tinner worked 2 weeks at \$10.00 per day.
9. Each workman's helper gets \$7.00 per day. Each one has had a helper with him all the time. How much did each man's helper get?
10. How much do each of the helpers of the following tradesmen get? Each helper gets one half the pay of the tradesman.

Example: The tradesman gets \$10.00 per day
The helper gets $\frac{1}{2}$ of \$10.00 or \$5.00.

1. Excavator	.....	\$12.00 per day
2. Mason	.....	\$10.00 per day
3. Carpenter	.....	\$14.00 per day
4. Plumber	.....	\$60.00 per week
5. Electrician	.....	\$70.00 per week
6. Plasterer	.....	\$50.00 per week
7. Painter	.....	\$240.00 per month
8. Tinner	.....	\$220.00 per month

Comparison Problems

1. The painter gets.....more than the carpenter.
2. The painter gets.....more than the excavator.
3. The painter gets.....less than the electrician.
4. The painter gets.....less than the plasterer.
5. The painter gets.....more than the tinner.
6. The painter gets.....more than the plumber.
7. The painter gets.....more than the mason.

RECORDS AND REPORTS

A uniform method of keeping orthogenic backward class records is highly desirable. It will facilitate the transfer of pupils from one school district to another. It will yield valuable data for research and directly comparable information for teachers and administrative officers. It will stimulate care and accuracy in record keeping.

CUMULATIVE PUPIL PERSONNEL RECORD

The use of the Cumulative Pupil Personnel Record form printed in the appendix of this bulletin is recommended in the interest of establishing in Pennsylvania a uniform system of compiling data on mentally retarded pupils assigned to orthogenic backward classes. The form should be printed or mimeographed on substantial paper in order that it may survive use over a number of years. If it is insufficient in size, extra pages may be added. The Division of Special Education,

Department of Public Instruction, Harrisburg, Pennsylvania, invites constructive criticism from teachers of the orthogenic backward for the extension and improvement of this form.

A Cumulative Pupil Personnel Record form should be filled out as completely as possible for each child at the time of enrollment and supplemented later as indicated.

GENERAL DIRECTIONS FOR RECORDING DATA

FAMILY HISTORY AND GENERAL HOME CONDITIONS—The facts to be recorded under these headings will orient teachers of the orthogenic backward as to the hereditary and environmental factors influencing the development of their pupils. While some of these facts may be known to the teacher, a visit to the home will give authentic first-hand information and may serve to correct erroneous impressions based on biased opinions of informers. Before visiting a home, the teacher should familiarize herself with the general scheme of the form and with the items of desired information in connection with "Family History" and "General Home Conditions" listed. This form should at no time be in evidence during the visit, which should be a friendly one, the primary purpose being to secure the cooperation of the parents and to better understand the pupil's handicap.

DEVELOPMENTAL HISTORY OF THE CHILD—The data required under this heading on the Cumulative Pupil Personnel Record may be procured from the reports of the medical examiner and of the psychologist. If all of the required information is not available from these sources, facts regarding the developmental history of the child may be obtained from the mother by the teacher or school nurse. The correction of physical defects should be recorded promptly. The record as a whole always should be as complete as possible.

EDUCATIONAL HISTORY—Part of the information required under this heading will be found on the pupil's original registration and school progress cards. The teacher should determine at the time of enrollment the pupil's performance level in reading and arithmetic and record these facts in the places designated.

The educational progress and the individual and social development of each pupil should be evaluated and recorded by the teacher at the end of each school year, as long as the pupil is enrolled.

FOLLOW-UP RECORD—Pupils should be encouraged to report informally, periodically, to the teacher regarding their industrial or occupational experiences and relationships. This information, if faithfully recorded, together with a study of occupations suitable for the orthogenic backward and of the operations involved, should yield invaluable data in planning an effective educational program and in adjusting orthogenic backward class procedure to the actual life needs of mentally retarded pupils.

REPORT CARDS

The insistence of special class pupils and their parents on reports of school progress necessitates the issuing of periodic reports. The usual reports given to the pupils of the regular grades are totally

inadequate for the orthogenic backward because the educational situations and objectives of the latter class differ from those obtaining in the regular grades. A primary objective of an educational program for the mentally retarded is the development of adequate personalities through *successful* achievement.

The attainment of this objective necessitates the adapting of lessons and problems to individual abilities. Under these circumstances, the inference is that results in all subjects of instruction will be reasonably perfect and, therefore, marks are superfluous. Of far more importance than the grade or level of achievement in subject matter, is the maximum development of each pupil as an individual and as a member of his social group. Behavior patterns leading to adequate personalities and satisfactory social adjustment are indicated in the suggestive pupil report card in the appendix of this bulletin. (Other characteristics may be substituted for those listed if so desired.) An evaluation of these factors will have greater significance in relation to the ultimate goals of education than literary accomplishments or manual attainments.

Space has been provided in the suggestive report card for indicating any outstanding or meritorious achievement of the pupil during the periods covered by the report. These statements may refer to exceptional progress in literary subjects or to outstanding accomplishments in manual activities. The number of report periods should conform to those of the regular grades.

At the close of the school year, the teacher should record her individual and social evaluation of each pupil on the Cumulative Pupil Personnel Record as a part of his educational history.

RECORD FILING

Each classroom should be equipped with at least one single drawer, art-metal letter file, to insure the safe keeping of records; a set of 9 x 12 heavy cardboard letter guides with alphabetical sub-divisions; and a supply of light weight letter-size folders with gummed tabs at inside center for attaching records. There should be at least one folder for each pupil with his name printed on the projection provided for this purpose at the top of each folder. The folders should be filed alphabetically in the letter file.

CONTENT OF FOLDER—Each folder should include all original and important data relating to each pupil:

1. Original registration and school progress cards.
2. Reports of medical examiner.
3. Psychological summary sheet with diagnosis and recommendation.
4. Cumulative Pupil Personnel Record (see sample form in appendix).
5. Specimens of academic work indicative of progress.

Kodak pictures of the pupil upon entrance and upon leaving the special class, as well as any outstanding handwork, will add interest and value to the record.

PART IV
APPENDIX

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CERTIFICATION OF PUBLIC SCHOOL PSYCHOLOGISTS

Standard certification to act as a public school psychologist shall require the completion of an approved college or university curriculum and forty-eight additional semester hours of study and practicum distributed substantially as follows:

I. Theory or Content	24 semester hours
II. Laboratory and Practice	12 semester hours
III. Experience	12 semester hours

I. THEORY OR CONTENT 24 semester hours

Twenty semester hours in theory or content shall be required and four shall be unassigned.

1. Required courses 20 semester hours

A. Educational Psychology 6 semester hours

Note: Four semester hours shall be discharged in connection with laboratory work; two semester hours as lecture courses.

B. Clinical Psychology, Abnormal Psychology, Psychology of Atypical Children, Psychology of Exceptional Children, Psychology of Abnormal Children, Psychology and Education of Atypical or Subnormal Children.

4 semester hours

C. Psychology of Childhood and Adolescence

4 semester hours

D. Tests and Measurements

4 semester hours

Courses in discharge of this requirement must be sufficiently comprehensive to include the theory and application of the qualitative interpretation of test and measurement results.

A thorough knowledge of performance tests, methods of giving performance tests and interpreting the results obtained is required. The theory and administration of group intelligence and achievement tests and the interpretation and application of results obtained shall be required.

- E. Statistical Methods 2 semester hours
 - 2. Unassigned Courses 4 semester hours
- The four semester hours to satisfy the unassigned requirement may be selected from the following: Mental Hygiene, Social Psychology, Psychology of Personality and courses usually classified as sociological, studying the causes of poverty, dependence and delinquency.

II. LABORATORY AND PRACTICE 12 semester hours

- A. Clinical Methods, Practice and Diagnosis 4 semester hours
- B. Diagnostic Teaching 2 semester hours
- C. Individual Research in Educational Psychology 4 semester hours

Evidence of the equivalent of two semester hours in individual case research work shall be submitted to discharge this requirement in part.

- D. Social Service and Field Work 2 semester hours
- A person who has satisfactorily completed the courses in theory or content and laboratory and practice, but who has not discharged twelve semester hours in experience shall be considered a psychological examiner.

III. EXPERIENCE *12 semester hours

Experience in recognized and approved psychological clinical work, including diagnosis and recommendation for care and remedial treatment, shall be required.

* Equivalent—216 clock hours.

CUMULATIVE PUPIL PERSONNEL RECORD

(Obverse)

School District of

Orthogenic Backward Class School Building

Pupil's last name	First name	Middle name	Address
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Place of birth	Date of birth	Sex	Color	Lives with
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FAMILY HISTORY

Father's name Nationality Occupation

Mother's maiden name Nationality Occupation

Parents living together—divorced—separated—remarried—father deceased—mother deceased (underscore)

Parents' attitude toward child

Parental cooperation with school

Language spoken in the home

Parental control

Financial status

GENERAL HOME CONDITIONS

Type of house Number of rooms Owned or rented (underscore)

Number of occupants: Parents .. Sisters .. Brothers .. Relatives .. Boarders ..

Condition of home

Type of neighborhood

DEVELOPMENTAL HISTORY OF CHILD

Age of walking First tooth Age of talking

Childhood diseases

Accidents

Special physical defects (vision, hearing, speech, orthopedic)

Present health and physical development

Corrections recommended

Corrections made

Welfare agencies cooperating

Psychological examinations:

Diagnosis Recommendation Date Examiner

Diagnosis Recommendation Date Examiner

Diagnosis Recommendation Date Examiner

PERSONAL TRAITS

Attitude toward school before entering special class

Attitude toward school on leaving special class

Desirable traits

Undesirable traits

VOCATIONAL FOLLOW-UP RECORD

Left school..... Age.....
 Employed at..... Wages..... From..... To.....
 Employed at..... Wages..... From..... To.....
 Employed at..... Wages..... From..... To.....
 Employed at..... Wages..... From..... To.....
 Remarks:

1. Use Code: A—Superior; B—Good; C—Average; D—Inferior, except when recording grade achievement levels in reading and arithmetic.
2. For use when there are separate departments for these subjects, as in a Special Class Center.

SUGGESTIVE OUTLINE FOR PLANNING LESSONS

Date

MORNING

Time	Period	
	Preparation	Announcements: Call attention to:
	Assembly	Bible selection: Correlated songs:
	Health Instruction	Application to unit:
	Oral and Written Expression	Group I—Reading theme: Teaching materials needed: Correlated seatwork:
		Group II—Reading theme: Teaching materials needed: Correlated seatwork:
		Group III—Reading theme: Teaching materials needed: Correlated seatwork:
		Group IV—Reading theme: Teaching materials needed: Correlated seatwork:

Time Period

Relaxation Period	Correlated imitative play:			
Spelling	Group I Letter of alpha- bet or spelling word	Group II Spelling Word	Group III Spelling Words	Group IV Spelling Words
Social Studies	Application to unit:			
Penmanship	Exercises: Group I Group II Group III Group IV			
Recreational Activities	Exercises: Games:			
Manual Activities	See Manual Activities Progress Record			
AFTERNOON				
Assembly	Discussion or story:			
Number Facts	Group I—Process: Teaching materials needed: Correlated seatwork:			
	Group II—Process: Teaching materials needed: Correlated seatwork:			
	Group III—Process: Teaching materials needed: Correlated seatwork:			
	Group IV—Process: Teaching materials needed: Correlated seatwork:			

	Recreational Activities	Exercises: Games:
	Manual Activities	See Manual Activities Progress Record

The above outline is suggested as an aid to teachers in organizing learning exercises and in preparing correlated teaching materials for each group of pupils in the class, particularly in connection with the development of projects or integrated units of study. Such an outline will serve also as a basis for evaluating evidences of growth and for determining the extent to which the educational objectives of the project have been realized. This outline coincides with the suggestive daily program prepared for use in connection with the development of projects or integrated units of study in single unit classes for the orthogenic backward.

INDIVIDUAL MANUAL ACTIVITIES PROGRESS RECORD

..... Special Class

(Pupil)

(Teacher)

From To 193

Week of	Monday	Tuesday	Wednesday	Thursday	Friday	Remarks
3/25	Bird House N.S. More sanding needed	S.	O.	Bird stick S.	S.	Followed directions. Sawed accurately. Worked diligently and carefully.
	Knitted cap S.	S.	S.	O.	Woven purse S.	

This individual progress record should be used to indicate pupil growth in the acquisition of desirable attitudes and habits and development in the use of tools and materials. It should be used also to reveal to the teacher weaknesses of the pupil and the type of exercises necessary to correct these weaknesses. All information should be entered on an objective concrete basis, except where it is desired merely to indicate satisfactory progress.

The space in which the name of the article is written will indicate when it was started. At the end of each manual activities period, examine article and record progress (satisfactory or not satisfactory), date of completion, etc. Use abbreviations. Pupils sometimes have more than one article in course of construction, so two spaces are provided for each day. The above blank covers a period of twelve weeks. Various adaptations of this report are possible, such as a complete class record on one sheet giving substantially the same information; or a combination of the latter and a cumulative individual progress report for each pupil.

(Obverse)

SPECIAL CLASS REPORT CARD ¹

DEVELOPMENT AS AN INDIVIDUAL REPORT PERIODS	DEVELOPMENT AS A MEMBER OF SOCIAL GROUP REPORT PERIODS
1. HEALTH HABITS Observes rules of health taught.	1. COOPERATION WITH GROUP a. In work _____ b. In play _____ c. In keeping school attractive _____
2. PERSONAL APPEARANCE Keeps teeth, face, hands and nails clean. Keeps hair combed, and clothing neat and clean.	2. RESPECTS RIGHTS OF OTHERS Shows consideration for comfort and welfare of others. _____
3. ORDERLINESS Keeps personal belongings neatly and properly arranged. Prepares work neatly.	3. RESPECT FOR PROPERTY (Including Preservation) Does not mar or destroy public property, nor waste school supplies. _____
4. PERSEVERENCE Persists with sustained effort until an assignment is satisfactorily completed.	4. SELF-CONTROL Refrains from impulsive, hasty and undesirable conduct in social relations. _____
5. THOROUGHNESS Maintains acceptable standards of excellence in all details.	5. COURTESY Speaks and acts politely. ATTENDANCE Sessions Present _____ Sessions Absent _____ Sessions Late _____
6. RELIABILITY Accepts responsibility and is dependable.	
7. OBEDIENCE Respects authority and willingly conforms to rules and regulations.	
8. RESPONSIVENESS Adjusts cheerfully and readily to situations.	
9. INDUSTRY Uses time advantageously. Acts independently when occasion demands.	

NOTABLE ACCOMPLISHMENTS

First Report Period _____
 Second Report Period _____
 Third Report Period _____
 Fourth Report Period _____
 Fifth Report Period _____
 Sixth Report Period _____

Successful achievement is the keynote of the special class of the _____ School. To accomplish this, all instruction is adapted to the needs and abilities of the pupils that an adequate personality may be developed in each child through classroom activities resulting in personal satisfaction and happiness.
 This report indicates the pupil's response as an individual, as a member of the group, and his outstanding achievements.
 The teacher will welcome an opportunity to discuss with parents this report and the cumulative record of progress in all activities, which is kept for each pupil in the special class.
 Marks: C—very seldom, B—Part of the time, A—Practically always. (Some schools may wish to omit letter marking and give fuller description of evidences of growth.)
 1. (Based on report cards used in Schenectady, New York, Donora, Lancaster, and Philadelphia, Pennsylvania.)

(Reverse)

School Medical Examination

Remedial defects should receive immediate attention.

SCHOOL DISTRICT OF

Date	Physical Defects	Date Corrected

REPORT CARD

Signature of Parent or Guardian

Report
Periods

I have examined this report.

..... Orthogenic Backward Class

TERM 193 -193

Pupil's name _____

Pupil's address _____

Teacher _____

EQUIPMENT AND SUPPLIES

MINIMUM EQUIPMENT

The following statement contains a minimum list of equipment for a single orthogenic backward class; a statement of general classroom supplies; suggestive additional orthogenic backward classroom equipment, not necessary but desirable; and tools and materials for handicrafts usually taught to the orthogenic backward.

REGULAR EQUIPMENT—

18 Substantial tables

Maximum top measurements 24 x 36; tables may be of uniform size, and legs shortened to accommodate physical development of pupils. If supplied without boxing, tables can be nested, provided top measurements and heights vary sufficiently. "Nesting" of tables provides more space for physical activities.

Measurements that permit "nesting":

<i>Height</i>	<i>Top</i>
22"	26 x 18"
24"	30 x 20"
26"	34 x 22"
28"	38 x 24"
30"	42 x 26"

20 Strong, well-made chairs

Suggested heights for chairs: 12", 13½", 15", 16½", and 18"

Rubber tips or "domes of silence" on all legs.

SPECIAL EQUIPMENT—

Approximate Cost

1 Woodworking bench 52' long equipped with two (2) direct acting vices	\$25.00	
1 Carpet loom, foot power, 2 harness \$35.00		
4 harness	\$50.00	
1 Rectangular loom for hooked rugs. (Can be made locally)		
*1 Large supply closet	15.00	
*18 bins for pupils' unfinished handwork	10.00	
*1 Paint cabinet—(metal lined box or tin box or can)	2.00	
*1 Tool closet	5.00	
*1 Paint table—metal top	8.00	
1 Sewing machine—foot power	30.00	or less
1 Victrola	15.00	or less
1 Hand printing outfit—large type for flashcards	2.50	
1 Hectograph	3.50	
1 Galvanized tub for soaking reed and cane	1.00	
1 Card cutter, 15" blade	9.75	
1 Eyelett Punch	2.00	
6 Small desk looms 9" x 12", rods and needles	4.50	
1 Rake knitter, 11"	1.00	
18 Pair of scissors, pointed ends	5.00	
12 Coping saws with ratchet, 4½" swing, 75c each	9.00	
6 Dozen coping saw blades..... 15c dozen .....	.90	
1 Cross cut saw, 9 point, 20" or 22" long	2.50	
1 Rip saw, 8 point, 20" or 22" long	2.50	
1 Back saw, 10" long	2.00	
1 Compass saw .....	.85	
2 Planes, (1 jack plane and 1 block plane)	6.00	
3 Hammers of different sizes, brad claw	3.00	
3 Chisels: ¼", ½", 1"	75c each	2.25
3 Files: 1 wood rasp; 1 fine wood, 1 fine rat tail	1.00	

1 Needle for hooking rugs	1.00	
1 Pair cutting pliers	1.50	
2 Screw drivers, 1 large, 1 small .....	.80	
1 Brace, 8" sweep and outfit of 6 bits, ¼"-1"	6.00	
1 Rose countersink for setting screws .....	.25	
1 Try square	1.00	
1 Mallet, wooden, round face, 2½" diameter	1.00	
1 Spoke shave, 2½" blade	1.00	
6 Bench vices—to be attached to tables when needed— (Protect table with felt).....	\$2.00-7.00 each	12.00 42.00
1 Nail set 1/16" opening .....	.15	
1 Iron clamp 8" opening	1.00	
1 Marking gauge .....	.75	
1 Small automatic push drill with set of drills .....	.90	
1 Sloyd knife .....	.50	
1 Oil stone	1.50	
1 Boxwood folding rule	1.00	
6 Paint brushes 1" flat—1½" flat	1.50	
1 Dust pan .....	.25	
1 Dust brush .....	.75	
1 Floor brush	1.50	
		\$253.60

Prices quoted are neither the highest nor the lowest but average for standard materials that should give, under ordinary conditions, satisfactory service.

*If these articles are sold or made locally, the price will be considerably less.

GENERAL CLASSROOM SUPPLIES

Classrooms for the orthogenic backward should also be equipped with the following:

- Chalk, colored and white
- Crayons, wax, assorted colors
- Envelopes, manila, 10 x 13—for seat work
- Eyelets—to use with eyelet punch
- Glue, liquid
- Ink—India
 - Printing
 - Printing ink pads for stick printing
- Paper, carbon
 - Construction, assorted colors, 9 x 12
 - Cross section, ½" blocks, 9 x 12
 - Drawing, manila
 - Engine, assorted colors, 9 x 12
 - Tablets, for pencil use
 - Weaving mats and strips (kindergarten)
- Fasteners, brass, paper
- Clips, paper
- Oak Tag, sheets 22 x 28 for posters and flash cards
 - Packages 9 x 12
- Paste, library
- Pencils, ½" diameter, kindergarten size for young children
 - Regular size for ordinary use
 - Hectograph
- Seals, gummed (stars, flags, etc.)
- Shears, large cutting
- Thermometer
- Thumb tacks
- Towels, paper
- Water colors—boxes of four colors
 - cakes, red, blue, yellow, charcoal gray

cups
brushes, camel hair
Word builders, (boxes of letters)

SUGGESTED ADDITIONAL EQUIPMENT AND SUPPLIES

Abeus
Balls, rubber
Beads, kindergarten, assorted colors and shapes
Blocks, word and number building
 kindergarten building
Book cases, made locally
Bulletin board, made locally
Cabinet, first aid
Clay, modeling
Clock dial
Closet, corner, long chest or shelf, for reed and cane, made locally
Counting boxes with sand paper numerals—made by teacher
Cubes, color
Cut-out wooden letters
Denominate number apparatus and cabinet
Dishes, cutlery, and cooking utensils
Dominoes
Educational toy money
File, letter size for cumulative class records
Hot plate, two burner, gas or electric
Iron, gas or electric
Ironing board
Musical instruments for rhythm work
Peg boards, primary
Pencil sharpener
Pictures, suitable
Puzzles, made by pupils
Rack or shelf for lumber
Sand paper letters, made by teacher
Sand table and sand for same
Scales, weighing 25 lb. capacity
Shelf—base of heavy meshed wire for drying freshly painted articles
Shelves or cabinets for display purposes
Shoe-strings, round, for stringing kindergarten beads
Straws, wooden, assorted lengths and colors, 1" to 5"

SUGGESTED ADDITIONAL HANDCRAFT TOOLS AND MATERIALS

BASKETRY EQUIPMENT (order sparingly if at all.)

Tools—Awls
 Bending pliers
 Cutting pliers
 Diagonal side cutting pliers
 Flat nose pliers
 Round nose pliers

Materials—Reed, flat $\frac{1}{4}$ "
 Reed, round, Nos. 0 to 7
 Basket and tray bases
 Raffia, assorted colors, $\frac{1}{4}$ lb. lots

BLOCK PRINTING EQUIPMENT

Tools—Bench hook
 Letter press or clothes wringer
 Linoleum carving tools
 Brayer
 Window glass, 8" x 10"

Materials—Adhesive tape
 Carbon paper

Designs
 Flat white paint
 India ink
 Linoleum
 Paper, unbleached muslin or other material
 Printers ink

BOOKBINDING EQUIPMENT

Tools—Scissors
 Needles
 Rulers
 Materials—Cardboard (tablet backs)
 Bookbinders linen (vellum)
 Linen thread (heavy)
 Pasta
 Paste brushes
 Cover paper
 Unprinted newspaper or manila paper for leaves
 Newspapers, old, for pasting process

BRUSHMAKING EQUIPMENT

Tools—Work bench and vice
 Materials—Fibre, assorted lengths and colors
 Backs and handles
 Roving (soft brushes)
 Wire, copper, light and heavy

CHAIR SEATING SUPPLIES

Tools—Awl
 Pliers
 Wooden pegs, hand made
 Materials—Flat reed, $\frac{1}{4}$ "
 Cane, fine
 medium
 binding
 Fibre, rainbow
 Frames, for stools and chairs

LEATHERCRAFT EQUIPMENT

Tools—Special spacing gauge spring punch No. 0
 Eyelet punch
 Drive punches No. 0, No. 1
 Snap fastener
 Modeling tools
 Background stamping tools
 Maple punching board about 12" x 15"
 Wooden mallet
 Awl
 Shears
 Materials—Non-tooling leather remnants, assorted colors, sold "as is"
 Lining leather remnants, ditto
 Tooling leather remnants, ditto
 Leather or rubber cement
 Snaps or fasteners
 Eyelets
 Lacing, black, $\frac{3}{32}$ " goat skin, colored $\frac{3}{32}$ " calf skin

LINOLEUM CARVING EQUIPMENT (PLAQUES)

Tools—Bench hook
 Linoleum carving tools
 Materials—Designs
 Enamel paints
 Linoleum remnants

METALCRAFT EQUIPMENT

Tools—Alcohol lamp

Ball pien hammer (2 sizes)
 Chain pliers
 Coping saw block
 Dapping die
 Files—large and small
 Hand drill and drill points
 Horn mallet
 Jeweler's saw frame and blades
 Pliers, round nose
 Shears, tin

Materials—Alcohol
 Copper, No. 16, No. 18
 Patterns
 Pumice, powdered

NEEDLECRAFT EQUIPMENT

Tools—Darners, for darning stocking
 Needles, assorted sizes, for sewing
 Blunt for weaving
 Crocheting, assorted sizes, steel, bone, and wood
 Knitting, assorted size
 Pins, common
 Sewing cards
 Shears, cutting, assorted sizes
 Tape measure
 Thimbles, assorted sizes
 Yard stick

Materials—Binding tape, bias,—box of assorted colors
 Burlap, basket weave
 Brass rings, $\frac{1}{2}$ " and $\frac{3}{4}$ " diameter
 Cotton, sewing, black and white, Nos. 40, 50, and 60
 Crochet, white, eru
 Pearl, for embroidery and weaving
 Silkateen, embroidery and weaving
 Darning, assorted shades
 D. M. C. embroidery cotton, assorted colors
 Crash, linen for towels
 Gingham, checked, assorted colors
 Huckaback, for towels
 Muslin, unbleached for "crayonxing" etc.
 Oil cloth, assorted plain colors, for toys, etc.
 Serim, for net weaving
 Yarn, wool, for net weaving
 Stamped patterns for embroidery
 Net, cross stitch, course
 Crepe paper, assorted shades and colors
 Mill remnants of cotton and silk

RUG HOOKING EQUIPMENT

Tools—Rectangular, adjustable frames
 Hooking needles

Materials—Burlap patterns
 Stocking roundings from hosiery mills
 Remnants from lugerie mills
 Wool thrums from carpet mills
 Dyes for dyeing stocking roundings

SHOE REPAIRING EQUIPMENT

Tools—1 Cabinet or box for shoe repairing equipment (made by pupils)
 1 Kindergarten chair
 1 Iron standard
 1 Set of tacks—assorted sizes, A, B, C, D
 1 Shoe hammer
 1 9" rasp

- 1 Knife sharpener
- 1 Stab awl, adjustable
- 1 Pair pulling off nippers
- 1 Pair cutting nippers
- 1 Carved lip knife
- 1 4" trimming knife (straight)
- 1 Nail set
- 1 Burnishing iron
- Materials—Leather soles, boy's (pairs)
- Leather soles, girl's (pairs)
- Rubber heels, boy's (pairs)
- Rubber heels, girl's (pairs)
- Assorted clinch nails, No. 4/8, No. 5/8
- Wooden shoe pegs
- Bristles
- Linen thread
- Shoemaker's wax
- Heel balls
- Heel plates, assorted, pairs
- Patching leather, black, brown
- Leather, for heel lifts
- Cement, rubber
- Ink, black, brown
- Shoe laces, black, brown
- Polish, shoe, black, brown

TIN CAN TOY CONSTRUCTION

- Tools—Can opener
- Compass
- Cutting pliers
- Dividers
- Drill and drill points
- Electric soldering iron
- Files—large and small
- Iron pipe, several sizes, for shaping tin
- Steel vice for bending and folding tin
- Tin snips, small and large
- Wooden mallet
- Materials—Acid solder
- Enamel paint
- Steel wool
- Tin bottle tops—all varieties
- Tin cans
- Tin scrap from local tinsmiths

WEAVING EQUIPMENT (rugs, mats, caps, bags, etc.)

- Tools—Desk looms
- Colonial mat frames
- Toy knitters for spool knitting
- Slats, white and colored, for weaving on oil cloth **mats**
- Looms, "A. B. C." (Cardboard)
- Schute weaving looms (Cardboard)
- Scarf and pillow loom—4 harness, table, handpower
- Materials—Yarn, Germantown, assorted colors
- Yarn, Craft, assorted colors
- Yarn, weaving, assorted colors
- Yarn, Thrums, wool, sold "as is" (carpet mills)
- Yarn, Thrums, worsted, sold "as is" (carpet mills)
- Yarn, Saxony
- Cotton, knitting, Nos. 10, 12, 14
- Cotton, crochet, mercerized, No. 5
- Carpet rags
- Roving, assorted colors

Jute, assorted colors

Carpet warp, assorted colors, $\frac{1}{2}$ lb. spools

WOODWORKING EQUIPMENT (additional)

Tools—Auger, bit, extension

Awl, scribe

Compass, 8"

Electric glue pot

Hooks, bench (class made)

Knives, jack, putty

Mitre box and saw

Pincers, carpenter

Ruler, steel edge, $1\frac{1}{2}$ " wide x 15" long

Saw, electric band, medium size 18"

Saw, combination compass

Saw, jig or fret, foot power

Saw, jig or fret, motor power

Scrapers

Wrench, monkey

Wood carving tools

Materials—Alcohol, denatured

Cotter pins, $1/8$ x $2\frac{1}{2}$ "

$1/16$ x $1\frac{1}{4}$ "

$1/16$ x $1\frac{1}{2}$ "

Cotton waste

Emery cloth

Enamel, white, assorted colors

Glue

Lumber—Basswood— $\frac{1}{4}$ S2S

$3/8$ S2S

$1/2$ S2S

Chestnut $1/2$ S2S

1 S2S

2 x 2 S4S

Pine 1 S2S

2 x 2 S4S

Poplar $1/4$ S2S

$3/8$ S2S

$1/2$ S2S

Gum $1/4$ S2S

$3/8$ S2S

$1/2$ S2S

Dowels $1/4$, $5/16$, $3/8$, $1/2$, $7/8$ —birch or poplar

Machine, oil and linseed

Nails—flathead, wire

four penny

six penny

eight penny

brads, assorted sizes

tacks

Oil paints, assorted colors

Pumice stone, powdered

Putty

Sand paper, No. 00, 0, $1/2$, 1, $1\frac{1}{2}$

Screws—assorted sizes

Shellac, orange

white

Stains, oak, cherry, mahogany, green oak

Steel wool

Turpentine

Varnish, clear

Wax, prepared

White lead

Wood filler, prepared, light

SOURCES OF HANDICRAFT TOOLS AND MATERIALS

The following list contains the names of commercial houses that have come to the attention of the Division of Special Education, Department of Public Instruction, as handling furniture, tools, and materials of interest to school officials organizing special classes and to special class teachers. The list is not complete; it is not intended to be preferential, but to be helpful in giving information as to sources of equipment and supplies that are out of the ordinary.*

BASKETRY MATERIALS (Reed, Raffia, Cane, etc.)

American Rattan and Reed Manufacturing Company, Station G., New York City
 American Reedcraft Corporation, 130 Beekman Street, New York City
 Beckley-Cardy Company, Chicago, Illinois
 Clara Hurtig, 188 Lott Street, Flatbush, Brooklyn, N. Y. (Toy Furniture Bases)
 Crafts Supply Company, The, 207 West 16th Street, New York City
 Dennison Paper Company, Philadelphia, Pa.
 Dobson-Evans Company, Columbus, Ohio
 Edward E. Babb & Company, Philadelphia, Pa.
 E. Steiger & Company, 49 Murray Street, New York City
 Garden City Education Company, Chicago, Illinois
 Grand Rapids Fibre Cord Company, Grand Rapids, Michigan
 J. L. Hammett Company, Newark, New Jersey
 J. W. Warnecke Corporation, Second & Grand Streets, Hoboken, New Jersey
 Louis Stoughton Drake Company, Inc., Boston, Mass.
 Magnus Brush & Craft Materials, 604 West Lake Street, Chicago, Illinois
 Milton Bradley Company, 401 N. Broad Street, Philadelphia, Pa.
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 Prang Company, The, New York City
 Thomas B. Meehan Company, Dresher, Pa.
 Waldercraft Company, The, 257 N. Tacona Street, Indianapolis, Indiana

BEAD CRAFT SUPPLIES

Crafts Supply Company, The, 207 West 16th Street, New York City
 Elliott, Greene and Company, 15 West 37th Street, New York City
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 Walco Bead Company, The, 37 West 37th Street, New York City

BLOCK PRINTING (See linoleum carving)

BRUSHMAKING MATERIALS

Joseph O. Flatt Company, 137 Cedar Street, Reading, Pa.
 Magnus Brush & Craft Materials, 604 West Lake Street, Chicago, Illinois
 Ox Fibre Company, The, New York City
 Vivaek Company, The, 486 Grand Street, New York City
 Walles Supply Company, Erie, Pa.

CHAIR SEATING SUPPLIES (See Basketry Materials)

CROCHETING (See Weaving, Crocheting, Knitting, and Sewing)

DECALCOMANIAS (See Silhouettes)

HOOKED RUGS (Frames, Designs, Tools, and Materials)

American Reedcraft Corporation, 130 Beekman Street, New York City
 Art Crafts Industries, 66 Church Street, Cambridge, Mass.
 Bernhard Ulmann Company, Inc., 107-113 Grand Street, Station S., New York City
 Bucilla Company, The, New York City
 Crafts Supply Company, The, 207 West 16th Street, New York City
 D. W. & W. Hosiery Company, 1130 Moss Street, Reading, Pa. (Looper Clips & Roundings)
 Emile Bernat & Sons Company, 89-99 Bieckford Street, Jamaica Plain, Mass.
 Horner Brothers Woolen Mills, Eaton Rapids, Michigan
 January and Wood Company, Maysville, Kentucky
 John E. Garrett, 381 Dudley Street, Boston, Mass.
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 Pepperell Braiding Company, East Pepperell, Mass.

*Teachers of the orthogenic backward are requested to send, from time to time, additional information as to sources of satisfactory tools and materials to the Division of Special Education, Department of Public Instruction, Harrisburg, Pennsylvania.

Thayer & Chandler, 913 Van Buren Street, Chicago, Illinois
 Vaughan Knitting Mills, Pottstown, Pa. (Looper Clips & Roundings)
 M. J. Whittall Associates, Ltd., Worcester, Mass. (Wool and Worsted Thrums)
 Wm. H. Horstmann Company, Philadelphia, Pa.

KNITTING (See Weaving, Crocheting, Knitting, and Sewing Materials)

LEATHER, TOOLS, AND FINDINGS

C. W. Dannenhauer, 143 N. 4th Street, Philadelphia, Pa.
 Charles A. Toebe, 149 N. Third Street, Philadelphia, Pa.
 Crafts Supply Company, The, 207 West 16th Street, New York City
 Fellowerafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
 Foley-Tripp Company, 193 William Street, New York City
 Graton & Knight, Worcester, Mass.
 Handicraft Leather & Supply House, Rochester, New York
 Harvey Anderson Leather Company, 73 Franklin Street, Brockton, Mass.
 Junior Achievement, Inc., Springfield, Mass.
 Lester Griswald, Colorado Springs, Colorado
 M. Loeffler, 99 Liberty Street, Bloomfield, N. J. (Tools)
 National Craft Supply Company, The, 94 Lexington Avenue, New York City
 Osborn Brothers Supply Co., Inc., Chicago, Ill.
 Pierce, Mrs., Hillside Studio, Newton, Mass. (Leather Dyes)
 Robert Kelly & Sons, Ltd., Liverpool, England
 W. A. Hall, 250 Devonshire Street, Boston, Mass.
 Walderaft Company, The, Indianapolis, Indiana
 Weldons, Ltd., 30-32 Southampton Street, Strand, London, England
 Wilder & Company, Chicago, Illinois
 William Dixon, Inc., Newark, New Jersey

LINOLEUM CARVING, WOOD CARVING AND BLOCK PRINTING (Tools, Materials & Designs)

Alfred Field & Company, 93 Chambers Street, New York City
 Fellowerafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
 Hunt Pen Co., Camden, N. J.
 J. L. Hammett Company, Newark, N. J.
 J. R. Holcomb Company, 1518 St. Clair Avenue, Cleveland, Ohio
 Milton Bradley Company, 401 N. Broad Street, Philadelphia, Pa.
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 O. P. Craft Company, Inc., The, Sandusky, Ohio
 Polar Manufacturing Co., 401 North Broad Street, Philadelphia, Pa. (Linoleum scrap)
 Walderaft Company, The, Indianapolis, Indiana

LOOMS

Art Craft Looms 4-Harness	Art Craft Industries, Cambridge, Mass. Structo Manufacturing Company, Freeport, Illinois
Braid Weave Looms	Art Craft Industries, Cambridge, Mass. J. L. Hammett Company, Newark, N. J.
Cambridge 4-Harness Looms	Garden City Educational Company, Chicago, Illinois J. L. Hammett Company, Newark, N. J.
Columbia Table Looms	The Crafts Supply Company, 207 W. 16th Street, New York City
Devereaux Loom 4-Harness	Devereaux Mansion Loom Company, Marblehead, Mass.
Hammett's 4-Harness Loom	J. L. Hammett Company, Newark, N. J.
Homekraft Looms	Anna Mott Shook, Homekraft Farm, Peekskill, N. Y.

Ideal Loom	Art Craft Industries, 66 Church Street, Cambridge, Mass. C. A. Reed Company, Springfield, Ohio Garden City Educational Company, Chicago, Illinois J. L. Hammett Company, Newark, N. J. Milton Bradley Company, Philadelphia, Pa.
Little Dandy Loom	From firms selling the Ideal Loom
Little Wunder & Wunder Weaver	School Loom & Novelty Company, 1202 W. 7th Street, Mishawaka, Ind.
Mop Loom	Mrs. Anna T. Schneidenwendt, 624 S. Peoria St., Chicago, Illinois
Practical Loom 4-Harness	Art Craft Industries, Cambridge, Mass.
Progressive Table Loom 4-Harness	The Waldcraft Company, Indianapolis, Ind.
Rake Knitters	J. L. Hammett Company, Newark, N. J. Milton Bradley Company, Philadelphia, Pa.
Snow Looms	Edith Huntingdon Snow, 65 East 56th Street, New York City
Tawido Table Loom	Art Craft Industries, Cambridge, Mass. J. L. Hammett Company, Newark, N. J.
Todd Hand Looms	J. L. Hammett Company, Newark, N. J.
Tyndall Hand Looms	J. L. Hammett Company, Newark, N. J.
Weave-Nova Art Hand Loom	Craft Supply Company, 207 W. 16th Street, New York City National Crafts Supply Company, 94 Lexington Avenue, New York City
Weaver's Friend	Garden City Educational Company, Chicago, Illinois National Crafts Supply Company, 94 Lexington Avenue, New York City

MARIONETTES

Fellowcrafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
Waldcraft Company, The, Indianapolis, Indiana

METAL CRAFTS

Fellowcrafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
Herre Bros., Seventh and Emerald Streets, Harrisburg, Pa. (Cooper)
Junior Achievement, Inc., Springfield, Mass.
Lester Griswald, Colorado Springs, Colorado
Metal Crafts Supply Company, Providence, R. I.
National Crafts Supply Company, The, 94 Lexington Avenue, New York City
T. B. Hagstoz & Son, 709 Sansom Street, Philadelphia, Pa. (Sterling Silver)
William Dixon, Inc., Newark, N. J.
Local tin shops and wrought iron works

MODEL STORE

Educational Foundations, 19 Flatbush Avenue, Brooklyn, N. Y. (Free)

NEEDLECRAFT (See Weaving, Crocheting, Knitting and Embroidery)**REED, RAFFIA, CANE (See Basketry Materials)****SCHOOL ARTS MATERIALS (Burlap, Canvas, Designs, Notions, etc.)**

American Crayon Company, 1706 Hayes Avenue, Sandusky, Ohio
American Reedcraft Corporation, 130 Beekman Street, New York City
Art Craft Industries, 66 Church Street, Cambridge, Mass.
A. Schoenhut Company, The, Sepviva & E. Hagert Streets, Philadelphia, Pa.
(Toys, etc.)
Craft Supply Company, The, 207 West 16th Street, New York City
Edward E. Babb & Company, Philadelphia, Pa.

Elson Art Publishing Company, Belmont, Mass.
 Emile Bernat & Sons Company, 89-99 Bickford Street, Jamaica Plain, Mass.
 E. Steiger & Company, 49 Murray Street, New York City (Kindergarten Materials)
 F. A. Owen Publishing Company, Dansville, New York
 Magnus Brush and Craft Materials, 604 West Lake Street, Chicago, Illinois
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 Pepperell Braiding Company, East Pepperell, Mass.
 Practical Drawing Company, Chicago, Illinois (Practical Drawing Books)
 Prang Company, The, New York City
 R. A. Fife, Corporation, Mamaroneck, New York
 Tea Tile Manufacturing Company, The, Newton, Iowa
 Thayer & Chandler, 913 W. Van Buren Street, Chicago, Illinois
 Waldercraft Company, The, Indianapolis, Indiana

SILHOUETTES AND DECALCOMANIAS

American Reedcraft Corporation, 130 Beekman Street, New York City
 Fellowcrafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
 Meyer Cord Company, The, 120 S. LaSalle Street, Chicago, Illinois
 National Decalcomania Corporation, 236 N. 60th Street, Philadelphia, Pa.

SEWING (See Weaving, Crocheting, Knitting, and Sewing Materials)

SHOE REPAIRING

Charles A. Toebe, 149 N. Third Street, Philadelphia, Pa.
 Cosica Brothers, 110 Market Street, Pittsburgh, Pa.

TIN CAN TOY CONSTRUCTION

Fellowcrafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
 Local hardware stores and tin shops

WEAVING, CROCHETING, KNITTING, SEWING AND EMBROIDERY MATERIALS

American Reedcraft Corporation, 130 Beekman Street, New York City
 American Thread Company, Holyoke, Mass.
 American Weaving Company, Syracuse, New York
 Art Craft Industries, 66 Church Street, Cambridge, Mass.
 Beckley-Cardy Company, Chicago, Illinois
 Carlercraft Company, Boonville, New York
 Colonial Yarn House, 1231 Cherry Street, Philadelphia, Pa.
 Crafts Supply Company, The, 207 West 16th Street, New York City
 Economy Yarn Company, Box 225 Station F., New York City (Thrums)
 Edward Babb and Company, Philadelphia, Pa.
 Emile Bernat and Sons Company, 89-99 Bickford Street, Jamaica Plain, Mass.
 Fellowcrafters, 2 Perkins Square, Jamaica Plain, Boston, Mass.
 Garden City Educational Company, Chicago, Illinois
 Grand Rapids Fibre Cord Company, Grand Rapids, Michigan
 H. E. Gunter, 30 East 14th Street, New York City
 Horner Bros. Woolen Mills, Eaton Rapids, Michigan
 January and Wood Company, Maysville, Kentucky
 J. & P. Coates, Pawtucket, R. I.
 J. L. Hammett Company, Newark, N. J.
 Junior Achievement, Inc., Springfield, Mass.
 Linen Thread Company, 96 Franklin Street, New York City
 Ludlow Manufacturing Associates, Boston, Mass.
 Magnus Brush & Craft Materials, 604 West Lake Street, Chicago, Illinois
 Milton Bradley Company, 401 North Broad Street, Philadelphia, Pa.
 M. J. Whittall Associates, Ltd., Worcester, Mass. (Wool and Worsted Thrums)
 National Crafts Supply Company, The, 94 Lexington Avenue, New York City
 Peace Dale Yarns, 25 Madison Avenue, New York City
 Pepperell Braiding Company, East Pepperell, Mass.
 Reed Manufacturing Company, Springfield, Ohio
 S. B. & B. W. Fleisher, Inc., Philadelphia, Pa.
 Sears & Roebuck Company, Philadelphia, Pa.
 Structo Mfg. Company, Freeport, Illinois
 Tinkler and Company, 527 Arch Street, Philadelphia, Pa.
 Titloe and Schuler, 125 South 5th Street, Reading, Pa.

Union Specialty Works, Boonville, New York (Patch Work Materials)
Walcraft Company, The, Indianapolis, Indiana
William H. Horstmann Company, Philadelphia, Pa.

WOODCARVING (See Linoleum Carving)

WOODWORKING TOOLS AND MATERIALS

Athol Machine and Foundry Company, Athol, Mass. (vises)
C. S. Osborne and Company, Newark, N. J. (Pinking Irons)
Fellowcrafters, 2 Perkins Square, Jamaica Plain Station, Boston, Mass.
Goodell-Pratt Company, Greenfield, Mass.
Hammacher, Schlemmer and Company, 4th Avenue and 13th Street, New York City
Henry Disston and Sons, Philadelphia, Pa.
Irwin Auger Bit Company, The, Wilmington, Ohio
Junior Achievement, Inc., Springfield, Mass.
Lusky, White and Coolidge, 71 West Lake Street, Chicago, Illinois
Miller Falls Company, Miller Falls, Mass.
Pike Manufacturing Company, Pike, New Hampshire
Robert Kelly and Sons, Ltd., Liverpool, England
Stanley Rule and Level Company, New Britain, Conn.
William Marples and Sons, Ltd., Sheffield, England

INEXPENSIVE MATERIALS FOR MANUAL ACTIVITIES

Teachers of the orthogenic backward have long recognized the educational possibilities of free, inexpensive, and discarded materials for the construction of useful and oftentimes attractive articles for the school, home, and playground. In addition to the manu-mental training involved, this practice develops an appreciation of the inherent but frequently unrecognized possibilities of discarded "odds and ends" and places within the reach of the pupils materials for leisure time occupations.

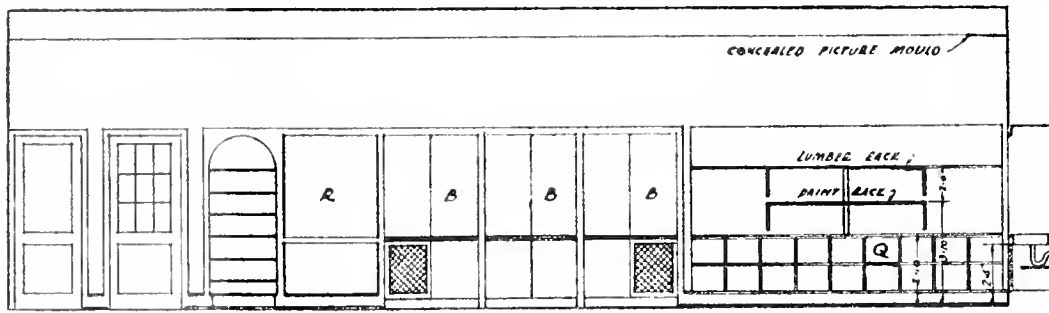
The suggestions listed below are indicative of the scope and usefulness of salvaged materials. A more extensive list will be supplied by the Division of Special Education, Department of Public Instruction, Harrisburg, Pennsylvania, on request.

*Materials**Articles*

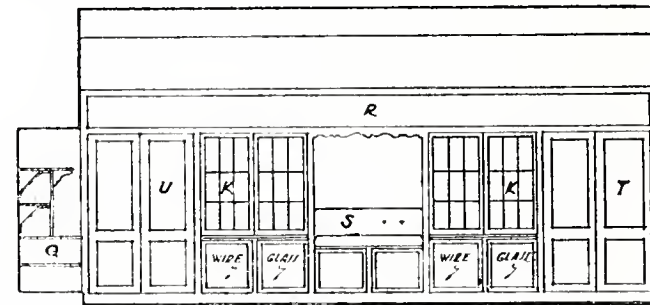
- | | |
|---|--|
| 1. Cloth | |
| A. Sugar and flour bags. | Aprons, dresses, towels, table scarfs, table covers, curtains, etc.
Apply stenciled or crayonexed designs. |
| B. Old silk stockings or stocking roundings from hosiery mills. | Stuffed toys, dolls, puppets. Hooked rugs, pillow tops, telephone mats, utility bags, rag carpet (roundings joined with slip knots for carpet weaving). |
| C. Silk remnants from lingerie and necktie factories. | Rugs, chair seats, utility bags, (hooked, braided, crocheted, knitted, woven). |
| D. Cotton patches. Silk patches. | Patch work, quilts, and cushions. |
| 2. Leather remnants from leather supply houses. Deer skin hides from local tanneries. | Belts, coin purses, keytainers, wallets, billfolds, pencil, scissors, and comb cases, etc. |
| 3. Linoleum remnants from department and house furnishing stores. | Block prints, tea tiles, mats, plaques. |
| 4. Paper | |
| A. Newspapers | Papier maché vases, bowls, trays, puppets, and false faces, building blocks for miniature buildings. |
| B. Tablet backs | Cardboard looms, backs for booklets. |
| C. Wallpaper (sample books) | Bookbinding, waste baskets, sewing baskets. |
| D. Wrapping paper | Booklets, albums, calendar and memorandum pads, picture frames, posters.
Apply stenciled, crayonexed or spattered designs. |
| 5. Tin cans | Candlesticks, sconces, ash trays, pin trays, lanterns, weather vanes, door stops, bird houses, biscuit, cookie, and sandwich cutters, hanging baskets, plant containers, toys. |
| 6. Wood | |
| A. Cigar boxes | Utility box with design carved on lid, bead looms, doll furniture, toys, garden sticks, paper knives, window ledges, etc. |
| B. Kraft cheese boxes | Ivy trellises, nail boxes, doll furniture, wagons, trucks, etc. |
| C. Spools | Wheels, tops, spool knitters, furniture, animals, dolls, puppets. |
| D. Store boxes and orange crates | Window boxes, recitation chairs, library corner tables, miniature houses, grocery stores, book cases, shelves, bins, toys, bird houses, tool cabinets, plaques. |

[Faint, illegible handwriting]

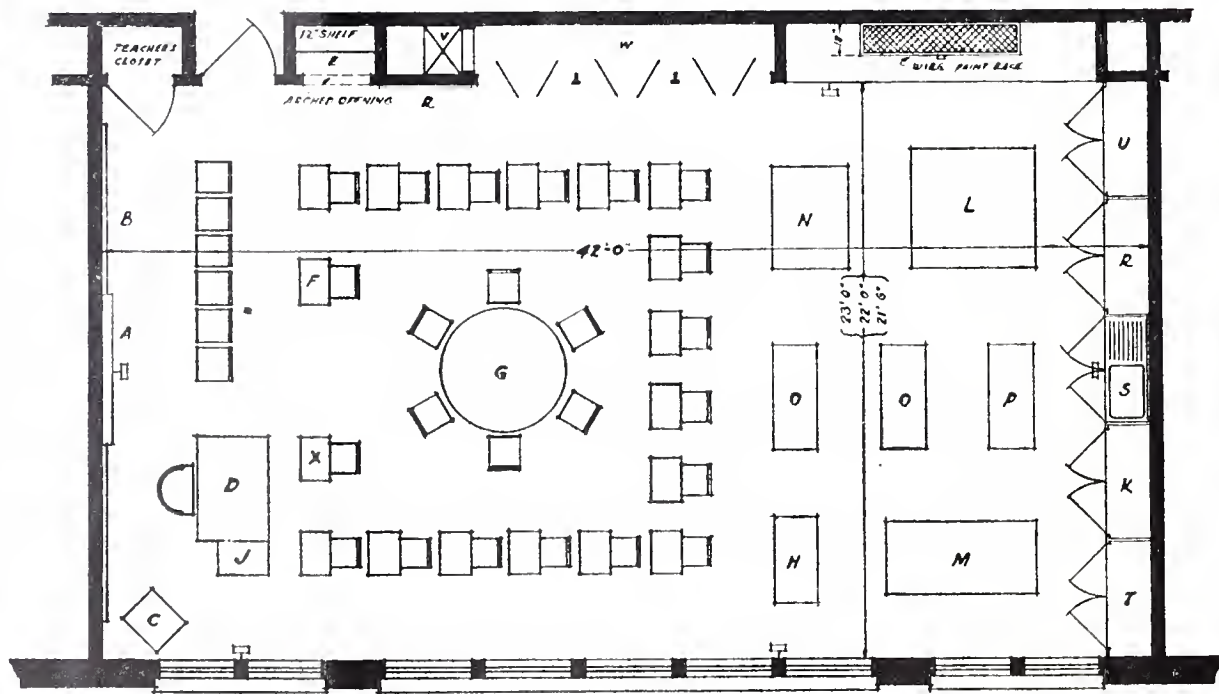




•SIDE ELEVATION•



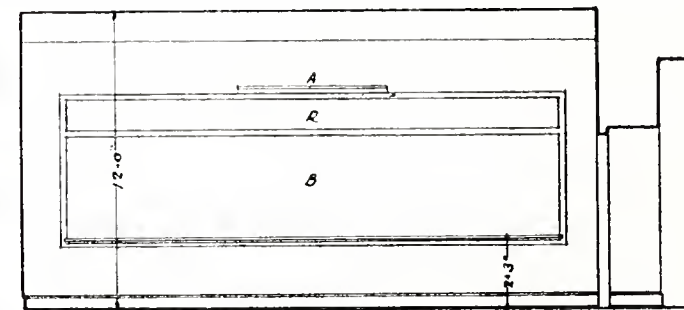
•REAR ELEVATION•



•PLAN•

SCALE 1" = 3'-0"

•SUGGESTED LAYOUT FOR A SINGLE UNIT
•ORTHOGENIC BACKWARD CLASS•



•FRONT ELEVATION•

•KEY•

- | | |
|--|---|
| A PROJECTION SCREEN | M SAND TABLE (REMOVABLE TOP) |
| B BLACKBOARD | N WORK TABLE |
| C V. CONTROL | O WORK BENCH |
| D TEACHER'S DESK | P PAINT TABLE (WITH COVERED TOP) |
| E BOOKCASE, SEAT WORK | Q STORAGE BINS |
| F INDIVIDUAL CHAIR & TABLE | R TACK BOARD |
| G LIBRARY TABLE (ROUND/SQUARE) | S SINK (PAINT STORAGE UNDER, METAL LINED) |
| H SEWING MACHINE | T TOOLS |
| J FILING CABINET | U SUPPLIES |
| K DISPLAY CASE - HAND CRAFT - MUSEUM SPECIMENS | V VENT |
| L LOOM | W WARDROBE |
| | X VARY SIZE & HEIGHT OF JEANS |

DEVELOPED IN COLLABORATION WITH THE DIVISION OF SPECIAL EDUCATION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF PUBLIC INSTRUCTION
DIVISION OF SCHOOL BUILDINGS
HUBERT C. EICHER, DIRECTOR
F. A. CO. DRAWN BY J. L. STEELE, E.A.

Floor Plan for a Single Unit Orthogenic Backward Classroom

(Blueprints may be obtained from the Department of Public Instruction)

A SUGGESTED DAILY PROGRAM FOR A SINGLE UNIT ORTHOGONIC BACKWARD CLASS

Prepared for use in connection with the development of Projects or Integrated Units of Study and
Suggesting a program of Socializing Activities related directly to the daily Social Experiences of the Pupils

MORNING SESSION

8:45-8:50	Personal Hygiene and Classroom Duties ¹	Removal of overcoats, overshoes, sweaters, and other clothing not needed indoors. Attention to any necessary personal hygiene; face, hair, hands, finger nails, etc.
8:50-9:00	Health Survey and Informal Period ²	Informal health survey: general appearance, slight indispositions, and indications of communicable diseases.
9:00-9:15	Assembly ³	Class participating as a unit: Greeting Song, Devotions, Salute to Flag
9:15-9:25	Health Instruction ⁴	Directly related to the current project or unit of study. Group participating as a unit.

EXPLANATORY NOTES

1. **Personal Hygiene and Classroom Duties**
These activities preferably should precede the opening of the morning session. With this preparation, the work of the day will proceed more smoothly and with greater avidity.
See page 1 for suggestions in regard to the roster of classroom duties and classroom attractiveness.
2. **Health Survey and Informal Period**
The health survey never should be neglected nor any pupil omitted. It is the most vital part of the day's proceedings. An informal survey is preferable to a formal health inspection in the usual orthogenic backward class composed of pupils ranging chronologically from eight to sixteen.
The informal period affords an opportunity for the pupils to discuss personal matters with the teacher, for reading bulletin board announcements, for sharpening pencils, for school banking, and other preparations for the day.
3. **Assembly**
This should be a happy occasion, the influence of which should extend throughout the school day. Self-expression through individual talents or accomplishments should be encouraged. Bible passages and Bible stories should be selected that are within the comprehension of the majority of the class. Songs should be correlated with the current unit of study whenever possible.
4. **Health Instruction**
This period presents an excellent opportunity for English expression in addition to the accumulation of knowledge regarding good health habits and safe practices in school, at home, and on playgrounds and streets. While the teacher directs the discussion and asks leading questions, the major contribution should come from the pupils in the form of complete sentences. These discussions on health and safety should be related to the project or unit of study being developed.
5. **Oral Expression**
Reading lessons of the type indicated on the program are in reality exercises in oral and written expression, oral and silent reading, spelling, and penmanship, and exercises through the exchange of booklets in learning to read the handwriting of others. Encourage pupils to evaluate the grammatical construction, spelling, and penmanship of their compositions. It is absolutely essential for the teacher to carefully check for accuracy the spelling and grammatical construction of each pupil's composition. The educational value of this procedure is nullified if errors in spelling and grammar are not corrected. Errors should be indicated by the teacher and corrected by the pupil.
6. **Relaxation Period**
A relaxation period is valuable for the relief that comes from change in posture and from diversion of attention. The length of the period should not be less than two or more than five minutes.
7. **Spelling**
Spelling words should be selected from the reading lessons of the project or unit of study. Usually one or two new words are adequate for a five minute teaching period. More words may be given to a capable pupil, if in the judgment of the teacher larger assignments will be advantageous.
Once or twice a week the spelling period may be devoted to instructing the pupils in the use of dictionaries, telephone directories, and indexes.
A pre-test of words not formally taught may be conducted on Friday to select words for formal spelling periods for the coming week.
The following method of teaching spelling is advocated. Have the pupils:
1. Look at word written on blackboard.
2. Pronounce word.
3. Analyze word into its component parts.
4. Spell word orally without looking at it.
5. Use word in a sentence.
6. Write word on blackboard.
7. Do correlated seatwork as instructed.
8. **Social Studies**
In a unit of study, social studies content frequently furnishes subject matter for discussions and reading booklets. In such cases, separate periods for these subjects are unnecessary. Visual aids, such as pictures, lantern slides, maps, miniatures and models, are specially adapted for teaching the social studies.
9. **Penmanship**
Provide daily penmanship periods if warranted by poor penmanship of the group as a whole. Every written exercise should be a penmanship lesson. Only the pupils' best efforts should be accepted at all times.
10. **Manual Activities**
At the beginning of each manual activities period, specific instruction should be given to pupils requiring help on uncompleted work and to pupils beginning the construction of a new article. At the end of the manual activities period, examine each pupil's handwork and record its status on the Manual Activities Progress Record Sheet, as suggested on Page 1.
11. **Assembly (Afternoon)**
The afternoon assembly should be devoted to oral expression, the ability the pupils need and will use most frequently. Every recitation period should be an oral English exercise and no opportunity should be lost by the teacher for correcting errors in spoken English, either in teaching periods or in informal conversations. The pupils should "learn by doing" rather than by listening and the teacher, although controlling teaching situations, should recede into the background as much as possible and encourage the pupils to exercise initiative in oral expression.
12. **Number Facts**
Drill on the fundamentals should be for accuracy rather than for speed and the application of the fundamental processes should be exceedingly concrete and practical. The type of correlated seatwork suggested for the several groups indicate the nature and scope of number facts to be taught as required by the needs and abilities of the pupils.

EXPRESSION THROUGH PUPIL EXPERIENCES IN SOCIALIZING ACTIVITIES

		GROUP I (Lowest)	GROUP II (Low)	GROUP III (Intermediate)	GROUP IV (High)
BLOCK I	Teaching Period (Reading)	Review words learned to date. Teach one new word through direct association with object, picture, or action.	Correlated Seatwork Match words with pictures or review work. Build preceding chart lessons with dissected words and phrases on strips of oak tag.	Correlated Seatwork Read silently preceding lesson, or write preceding lesson from corrected copy into booklets. Answer comprehension questions on preceding lesson. (Answers to be written in full if pupils are capable of doing so).	Correlated Seatwork Silent reading from "Our Own Readers" and supplementary material. Comprehension questions on previous lessons. (Answers to be written). Write last reading lesson into "Our Own Readers" after it has been checked by teacher.
	Correlated Seatwork	Color pictures. "Read and Do" and other similar exercises. Match words with pictures as review work. (Include new word). Cut and paste pictures in "dictionary" booklets.	Teaching Period (Reading) Review chart lessons hectographed by teacher in booklets. Chart exercise using story of previous day. Teach two new words through direct association with objects or pictures. Use words in short sentences composed by pupils and read from blackboard.	Teaching Period (Reading) Oral reading from "Our Own Readers." New lesson—developed orally sentence by sentence with pupils and based on their experiences or knowledge, written sentence by sentence on blackboard and read orally by pupils.	Teaching Period (Reading) Oral reading from "Our Own Readers" or supplementary texts. New lesson—developed orally sentence by sentence with pupils and based on their experiences or knowledge, written sentence by sentence on blackboard and read orally by pupils.
	Quiet Play	Blocks, pegboards, picture puzzles, and other sense training activities. (Check seatwork.)	Correlated Seatwork Color hectographed pictures in "Our Own Story" booklets. Directive exercises supplementing instruction.	Correlated Seatwork Write new story on tablet paper from blackboard model.	
	Oral Expression		Quiet Play Picture puzzles and other sense training materials. (Check seatwork.)		
	Oral Reading				
	Silent Reading				
	Written Expression				
Relaxation period: Attention to ventilation, directed imitative play exercises, or supervised games, correlated with unit of study if possible. Class participating as a unit.					
BLOCK II	Spelling ⁷	Teaching Period (Spelling) Review alphabet to date. Teach one new letter, using sandpaper or large wooden letters. Teach two or three letter words, using sandpaper or large wooden letters if pupils are capable of spelling.	Correlated Seatwork Study any misspelled words in preceding dictation. Review words in spelling booklets.	Correlated Seatwork Study any misspelled words in preceding dictation. Write into spelling booklets words and sentences developed in preceding lesson, after being checked by teacher.	Correlated Seatwork Write new reading lesson on tablet paper from blackboard model. Study any misspelled words in preceding dictation. Write into spelling booklets, sentences developed in preceding lesson, after being checked by teacher.
	Social Studies ⁸	Correlated Seatwork Sort known letters of alphabet (anagrams). Trace around small block letters and color tracings. Write letters of alphabet. Build spelling words (using anagrams). Other similar exercises. (Check seatwork.)	Teaching Period (Spelling) Teach spelling of one new word. See method suggested in explanatory notes.	Teaching Period (Spelling) Teach spelling of two new words. See method suggested in explanatory notes.	Teaching Period (Spelling) Teach spelling of two new words. See method suggested in explanatory notes.
	Penmanship ⁹		Correlated Seatwork Write word from blackboard model. Write sentence with new word from blackboard model, if capable of doing so.		
	Recreational Activities	Physical Education: Class participating as a unit. Supervised and free play adapted to group differences. Out-of-doors whenever possible.			
Spelling dictation to Groups II, III, IV, one word at a time to each group in succession until each list of new and review words for week is finished. Social Studies: Local and other significant facts of geography, history, and civics, as related to project or unit of study. Such facts are often used as reading content. Penmanship exercises and materials adapted to individual differences.					
11:00-11:55 Manual Activities ¹⁰ 1. Socializing activities through group participation in constructing miniature or model of project. 2. Arts and crafts: Woodwork, weaving, paper construction, clay modeling, metalcraft, leathercraft, household arts, or other crafts with attention to science and art appreciation. (Utilitarian in value and related to units of study). 3. School journeys and nature study trips. 4. Proper use and care of tools and materials.					
11:55-12:00 Preparation for dismissal.					
12:00-1:15 Noon Intermission If pupils remain at school during noon intermission, hands should be washed before lunch; teeth should be brushed after lunch; pupils sent out-of-doors to play whenever weather permits.					
AFTERNOON SESSION					
1:15-1:30 Assembly ¹¹ Class discussions as memory and English expression exercises on current events, nature study, art appreciation, elementary science, or the preceding chapters of a serial story read previously by one of the pupils to the class.					
BLOCK III	Number Facts ¹²	Teaching Period (Number facts) Adapt instruction to mental abilities. Motivate the teaching of number facts through application to concrete teaching materials and situations, to plays and games, and to manual activities. Dramatize instruction wherever possible. Proceed slowly with daily repetition and drill.	Correlated Seatwork Solve problems similar to seatwork for Group I but more advanced. Match number names, figures, and correct number of objects. Solve simple problems in addition and subtraction, using concrete materials and writing answers. Read and do exercises related to current unit of study. Other similar exercises.	Correlated Seatwork Solve problems involving: Fundamental processes taught. Quantity and cost of materials used in manual activities. Quantity and cost of materials used in miniature or model of unit of study. Practical buying and selling problems related to current unit.	Correlated Seatwork Solve problems similar to seatwork for Group III but more advanced. Solve practical problems involving decimals in relation to money only, simple fractions only, and Roman numerals as used on clock dials and chapter headings. (All exercises to be written by pupils and corrected later by teacher).
	Through Concrete	Correlated Seatwork Sort numbers. Sort toy money. Write numbers if competent. Arrange series of colored pegs, beads, sticks, blocks, etc. Arrange toy money as to denomination. Match numbers with objects. Match numbers with pictures of objects. Match dominoes. Count pictures of objects related to unit of study and write numbers. Other similar exercises. (Check seatwork.)	Teaching Period (Number facts) Adapt instruction in the fundamental processes to abilities and needs. Motivate the teaching of number facts through application to concrete teaching materials, to manual activities, and to practical arithmetical problems related to the current unit of study. See other suggestions outlined for Group I.	Teaching Period (Number facts) Adapt instruction in the fundamental processes to needs and abilities. See other suggestions outlined for Groups I and II.	Teaching Period (Number facts) Adapt instruction in the fundamental processes, fractions, decimals, and Roman numerals to abilities and needs. See other suggestions outlined for Groups I and II.
	Application to and Dramatization of		Correlated Seatwork Practical problems related to clock and calendar facts, to money, to weights and measures, to wages, to household expenses, to banking, and to travel. (All exercises to be written by pupils and corrected later by teacher).		
	Socializing Activities				
2:00-2:10 Recreational Activities Imitative play: Class participating as a unit. Supervised play adapted to group differences; or free play if desirable. Out-of-doors when weather permits.					
BLOCK IV					
2:10-3:10 Manual Activities ¹⁰ 1. Socializing activities through group participation in constructing miniature or model of project. 2. Arts and crafts: Woodwork, weaving, paper construction, clay modeling, metalcraft, leathercraft, household arts, or other crafts with attention to science and art appreciation. (Utilitarian in value and related to units of study). 3. School journeys and nature study trips. 4. Proper use and care of tools and materials.					
3:10-3:15 Preparation for dismissal.					

